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Assessment of school health program (SHP) at the governmental schools in Hebron city according to the teachers' and students' perspectives

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Assessment of school health program (SHP) at the governmental schools in Hebron city according to the teachers' and students' perspectives

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Assessment of school health program (SHP) at the governmental schools in Hebron city according to the teachers' and students' perspectives

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Dedication

To my very dear mum

To my beloved husband Ghassan

To my wonderful kids, Beesan, Omar, Shahd and Khalid

To my brothers, Ghareeb, Adli, Majdi, Ramzi and Karam

To my sisters, Arwa and Rana

Declaration

No portion of the work referred to in this study has been submitted in support of an application for any other degree or qualification to this or any other university or other institution of learning.

Signed …….
Jihan Mohammad Rajeh Dana
Date : 5/6/2011

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Furthermore, I would like to thank my mum who raised me to understand the importance of ambition and enthusiasm without which I would not have been able to complete my work. She always encouraged me to strive for the best and instilled in me the values of strong work ethic. As for my lovely brothers and sisters, I would like to extend my hand of appreciation for their continuous supports in achieving my goals and dreams, without forgetting to enjoy the journey of life the way I wished for. I would like to express my gratefulness, appreciation and love to my husband Ghassan and my kids , without their loves , support and belief in me I could not have achieved this goal. I would like to thank all the teachers and students for their collaboration and cooperation to accomplish this study.

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Abstract

The current study is conducted to assess the four components of the Palestinian Ministry of Education and Higher Education school health program (SHP) (health promotion and education, school nutrition, school health services and school environment) from the students' and teachers' perspectives at the governmental schools in Hebron city. A cross-sectional design was utilized to achieve this purpose. The data for the research was gathered using two self-reported questionnaires which were distributed to 114 teachers and 429 students of the 10^{th} grade from five randomly selected schools (Alsayeda Sara, Gernata, Mesbah Abu Hanak, Yosry Natsheh and Ibrahim Abu Daba'at) in Hebron city. A total of 543 questionnaires were returned, for a very high final response rate of 100%. Statistical analysis was performed using the Statistical Package for Social Science (SPSS), version 15. Descriptive statistics and the Chi-squared and Fischer exact tests were used to analyze the data.

The results of the current study revealed that there were strengths of SHP such as the availability of appropriate lightening in the classrooms, the availability of first-aid kit. In addition, using the school radio in broadcasting health information and having health committee in all the schools. However , there were still some serious weaknesses that need to be addressed particularly at males' schools. For example, regarding health education and promotion, there was a lack of dissemination of health publications at schools according to the students' and teachers' perspectives (31.4% and 48.2% respectively). In addition, there was a lack in the awareness about the importance of checking the expired dates of the food items. Moreover, only 14% of teachers versus 25.4% of the students indicated the involvement of students in activities to improve the health and positive behaviors of the students in schools. In relation to the school nutrition, less than half of the participants (38.2% of the students and 42.9% of the teachers) indicated a lack of healthy food at the canteen and that food items at the canteens were not kept in clean and covered containers (46.4% and 38% respectively). For school health service, findings showed that there was a lack of dental and eyesight tests according to the students' perspectives (38.5% and 39% respectively), in addition to the un-availability of clinics with doctors or nurses in schools. Also, the participants claimed that SHP teams did not visit their schools frequently. For school health environment, 49.2% of the students reported that the taste of the drinking water was not fine and 22.4% stated that it was smelly. The findings also revealed that the hygiene of the school toilets was not appropriate and there was a lack of green gardens at the male schools.

These results clearly indicated the need for proper and appropriate implementation of the SHP in the governmental schools. This might be achieved by increasing the number of school health committee members to ensure a wider participation and input for a more comprehensive approach, and to enhance the role of the school health coordinators by allocating more time to be invested in designing and implementing the SHP. Also, to ensure the achievement of the objectives of the SHP, regular evaluation and close monitoring of the SHP may be useful, particularly for students from disadvantages social class .

ملخص الدراسة

أجريت الدراسة الحالية لتقييم المجالات الأربعة لبرنامج الصحة المدرسية التابع لوزارة التربية والتعليم العالي الفلسطينية (مجال التثقيف والتعزيز الصحي, التغذية المدرسية, الخدمات الصحية المدرسية والبيئة المدرسية) من وجهة نظر الطلاب والمعلمين في المدارس الحكومية في مدينة الخليل .

تم اعتماد نظام التصميم المقطعي لهذه الدراسة, كما جمعت المعلومات عن طريق استبانتين جرى توزيعهما على 543 مشاركا (114 معلما ومعلمة و429 طالبا وطالبة من الصف العاشر) من خمس مدارس اختيرت عشوائيا (السيدة سارة, غرناطة, مصباح أبو حنك, يسري النتشة ومدرسة إبراهيم أبو الضبعات).

الاستجابة بلغت نسبتها 100%. وقد تم استخدام حزمة إحصائية خاصة بالعلوم الإنسانية (SPSS) للتحليل الإحصائي وكذلك استخدمت اختبارات إحصائية مثل (Chi square and Fischer exact tests) لتحليل البيانات.

أظهرت نتائج الدراسة مظاهر القوة في برنامج الصحة المدرسية والتي ظهرت في توفير الإضاءة المناسبة في الصفوف المدرسية وتوفير حقيبة الإسعاف الأولي . بالإضافة إلى تفعيل الإذاعة المدرسية لنشر المعلومات الصحية وتشكيل لجان صحية في جميع المدارس. إلا أن هنالك ضعفا في بعض مجالات برنامج الصحة المدرسية الأربعة يحتاج إلى التطرق إليه ,خاصة في مدارس الذكور، حيث أن مجال التعليم والتثقيف الصحي اظهر نقصا في توزيع المنشورات الصحية في المدارس وفقا لوجهة نظر الطلبة والمعلمين (31.4% و48.2% على التوالي)، بالإضافة إلى عدم نشر الوعي بين الطلبة بأهمية التحقق من تواريخ صلاحية المواد الغذائية. وأفاد فقط 14% من المعلمين و25.4% من الطلاب عن وجود اندماج للطلبة في نشاطات تساعد في تحسين السلوكيات الصحية والايجابية لديهم. أما فيما يتعلق بتطبيق مجال التغذية المدرسية, فقد أكد اقل من نصف المشاركين بان المقصف المدرسي لا يحتوي على مواد غذائية صحية كالعصائر الطبيعية أو المعجنات والفواكه (38.2% من الطلاب و42.9% من المعلمين), بالإضافة إلى أن المواد الغذائية التي تباع في المقصف لا يتم حفظها في بيئة نظيفة أو في علب مغطاة (46.4% و38% على التوالي). أما بالنسبة لمجال الخدمات الصحية المدرسية، فقد أظهرت النتائج من وجهة نظر الطلاب بان هناك نقصا في الفحوصات الطبية المتعلقة بالأسنان والبصر (38.5% و39% على التوالي), بالإضافة إلى عدم توفر عيادة صحية في المدرسة مؤهلة بأطباء أو ممرضين، وقلة زيارة فريق الصحة المدرسية التابع لمديرية التربية والتعليم لهذه المدارس. كما أظهرت الدراسة أيضا ضعفا في مجال البيئة المدرسية خاصة في توفير مياه شرب آمنة ونظيفة للطلاب، حيث صرح الطلاب بأن مذاق مياه الشرب ليس جيدا أو أن لها رائحة (49.2% و 22.4% على التوالي). بالإضافة إلى عدم الاهتمام بنظافة دورات المياه في المدارس وعدم توفير حدائق خضراء خاصة في مدارس الذكور.

هذه النتائج تشير إلى ضرورة التطبيق المناسب والسليم لبرنامج الصحة المدرسية في المدارس الحكومية, والذي يمكن تحقيقه بزيادة عدد أعضاء اللجنة الصحية لضمان مشاركة أوسع واتباع منهج أكثر شمولية, وبتعزيز دور منسقي الصحة المدرسية من خلال تخصيص المزيد من الوقت لاستثماره في تنفيذ برنامج الصحة المدرسية, كما أن التقييم والمتابعة الدوريين قد يعودان بالنفع، خاصة على الطلبة من الطبقات الاجتماعية الفقيرة.

List of abbreviations

SHP	School Health Program
CSHP	Coordinated School Health Program
PCBS	Palestinian Central Bureau of Statistics
MOH	Ministry Of Health
NGOs	Non Governmental Organization
UNRWA	United Nation Relief and Work Agency
WHO	World Health Organization
SPSS	Statistical Package for Social Science
CDC	Centers for Disease Control and Prevention
UNESCO	United Nations Educational, Scientific and Cultural Organization
FRESH	Focus Resources on Effective School Health
WFP	United Nations World Food Programme

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Chapter One

Introduction

Chapter One
Introduction

This study aims to assess the four components of school health program (SHP) (health promotion and education, school nutrition, school health services and school environment) that belongs to the Palestinian Ministry of Education and Higher Education according to the students' and teachers' perspectives at the governmental schools in Hebron city. Before discussing the aim and objectives of the current study, it is important to obtain an overview of the total number of the governmental schools in Palestine, in addition to the number of the students who attend these settings.

According to the educational institutions census 2007/2008, there are 2430 schools in Palestine, of which 1,615 are basic stage and 815 are secondary schools. 74.4% of these schools are in the West Bank and 25.6% are in Gaza Strip. Also, 75.4% of these schools are governmental schools, while 12.7% of them are UNRWA and 11.9% are private (PCBS, 2009). About 1097957 students attending these schools in which 69.8% of them enroll in the governmental schools, while 23.1% versus 7.1% of the students attend the UNRWA or private schools (respectively) (PCBS, 2009). The Palestinian National Authority is supervising 1833 of these as governmental schools with approximately 766730 students and nearly 55602 of them attending Hebron governmental schools (PCBS, 2009).

Children are a major portion of the Palestinian society as the Palestinian population pyramid of age distribution shows that 42.5 % of Palestinians are under 15 years of age (PCBS, 2009). These children belong to age group in which a good, healthy life style could be learned (Pandey, et al, 2005). Children are one of the main resources for future development in any society, making it important to pay more attention to their life style (PCBS, 2009). The School health program is one way to achieve this aim, by enabling the children to learn and change their behavior, and be knowledgeable about healthy lifestyles. Also, this program is considered as one of the most cost-effective ways to reach school age children, adolescents and the broader community (Mittal,2005) .

1.1 Problem Statement

The primary purpose of schools is the academic development of students; however, good health is a basic factor for effective education and learning (Marotz, 2008). Schools play a vital role in establishing healthy behavior patterns among school aged children and adolescents (Gelfman & Schwab, 2005) who may adopt many risky behaviors associated with mortality, morbidity disability and social problems during that time (CDC,2010b; Esmaeili et al, 2007; Peden et al ,2002; Shaheen & Edwards, 2008; Jildeh et al, 2010; Mikki et al, 2010; Ogden et al, 2004; Mozaffari & Nabaei, 2002; Isbaih, 2009; Gari, 2008; Mahfouz, 2009). In addition, students may face many health problems during their development such as smoking, alcohol or drug use, injuries, sexual problems, physical inactivity and nutritional problems which may lead to obesity, anemia or dental caries.

For example, one cross sectional study was conducted by Jildeh et al (2002-2003) in East Jerusalem to assess the nutritional status of the Palestinian students . The data was collected by self reported questionnaire and the sample consisted of 313 adolescents aged 11-16 years from the public and the private schools**.** The findings showed that 24.3% of the students were overweight, 9.9% were obese and 23.3% were anemic, while only 22.4% of them had physical activity more than five days a week and the boys were more physically active than girls. The whole sample consumed more saturated fat and less carbohydrates than what is advised (Jildeh et al, 2010). This study concluded that these students did not have healthy eating habits which might increase their risk for the development of health problems such as obesity, anemia, dental cavities and others (Hassan et al, 1997; Freedman et al, 2001; Petersen et al, 2005). This was supported by another cross-sectional study that was conducted by Mikki et al (2005) to investigate the dietary habits of the Palestinian adolescents in three governorates in Palestine (Ramallah, Hebron and Nablus). The sample consisted of 2952 students (1364 boys and 1588 girls) aged 13–15 years from 96 school of the 8^{th} and 9^{th} grade classes (34 in Ramallah, 31 in Hebron, and 31 in Nablus). The Data was collected by self-reported questionnaires. The findings showed that the Palestinian adolescents have irregular meal patterns and low intake of fruits, vegetables, and milk, only 26% of students had three meals daily, 26% of boys and 51% of girls had breakfast only once or twice per week or less

and 25% drank milk daily. Daily intake of salty snacks was more common in girls than in boys (62% versus 50%) whereas daily intake of regular soft drinks was more common in boys (40% versus 28%). Finally the daily intake of sweets was more common in girls than in boys (49% versus 42%) (Mikki et al, 2010).

In addition to the lack of healthy eating patterns among students, the literature review showed that smoking is prevalent among the Palestinian students. For example, it was found that of students aged 12 years and over, 19.8% (37% of the males and 2.2% of the females) reported as smokers and 4.0% of the smokers were within the age group of 10-18 years including 7.3% of the males and 0.6% of the females (PCBS, 2007).

These health problems and others affect the capacity of these students and their academic success during adolescence and adulthood. The school health program (SHP) is designed to reinforce the health-promoting behaviors among students and to provide the appropriate skills and services to avoid negative health practices (Allenworth, et al,1997). The school health program that relates to the Palestinian Ministry of Education and Higher Education was established in 1994, starting as a small unit and in 2005, it became a separate department called General Directorate for School Health which has general management to follow up its activity (Palestinian Ministry of Education and Higher Education, 2008 a). This program consists of 4 components: health promotion and education, school nutrition, school health services and school environment. To ensure that the implementation of the school health program is appropriate in Palestine, an assessment of the current state of the system is very necessary. The literature reveals a lack of studies that assess the four components of SHP at the governmental schools in Palestine and particularly in Hebron**.** There is only one study that was conducted by the Palestinian Ministry of Education and High Education (2008) in order to evaluate the four components of SHP in the governmental schools in Palestine. The sample consisted of students from one class only, their parents and three disabled students in the same school and they focused largely on school principal, school health coordinator, social supervisor, and school teachers. The data was collected by self reported questionnaire which consisted of 12 questions about the four components of the SHP. The results of this study will be discussed in more details in chapter two. but in summary, the findings showed that the majority of the teachers and students (96.3 % and 90.1% respectively) stated that the schools

were always concerned about the follow up and the supervision of the hygienic and cleanliness of the classrooms. Moreover, 96.3 % of the teachers versus 85.6% of the students stated that there is always awareness toward the school hygiene facilities. In addition, 97.6% of the teachers versus 87.6% of the students indicated that there is always awareness about students' personal hygiene and nearly the same percentages of the participants (85% of the teachers and 80% of the students) stated that the school followed up the students vaccination. Also, the majority of the teachers (96.2%) and 78.5% of the students indicated that their schools promoted healthy and positive behaviors among students inside and outside schools. Regarding voluntary activities for enhancing healthy behavior, 87% of the teachers and 73.1% of the students stated that students involved in such activities while only 18.1% of students versus 9.9 % of the teachers reported that students did not do that (Palestinian Ministry of Education and High Education, 2008 a). Despite the importance of this study, it has many weakness. For example, the methodology is not clear (e.g. total number of students or the participants) and it seems that the sample of the students was very small as only one class was involved. Also, the demographic characteristics of the participants were not clear and the study focused more on professionals such as principals, teachers and school health coordinators than students. Moreover, as the findings of the study were very positive , there is a need for external assessment of the implementation of the 4 components of SHP.

The results of the current study might help the Palestinian Ministry of Education and Higher Education in establishing standards to ensure a smooth implementation of school health programs at schools, leading to healthier Palestinian adolescents and eventually, adults.

1.2 Justification of the Study:

As discussed formerly, the Palestinian society is considered a young society because children aged under 15 years are about 42.5 % of the overall population and most of them are attending educational institutions either public or private. The literature showed that the Palestinian adolescents and students adopted risky health behaviors that are associated with mortality, morbidity disability and social problems. So a proper implementation of SHP can

reinforce the health-promoting behaviors among students and provide them with appropriate skills and services to avoid negative health practices (Allensworth,et al, 1997).

The current study was done due to the lack of studies that assess the implementation of the four components of SHP according to the teachers' and students' perspectives in Palestine.

1.3 Study Aim and Objectives

1. 3.1 Study Aim

The main aim of this study is to assess the SHP (health promotion and education, school nutrition, school health services and school environment) at the governmental schools in Hebron city according to the students' and the teachers' perspectives.

1.3.2 Specific Objective

- To assess the health education and promotion related items of SHP.
- To assess the nutrition related items of SHP.
- To assess the health services related items of SHP.
- To assess the environment related items of SHP.
- To examine the relationship between independent variables such as gender and participants' schools and the dependent variables such as health promotion and education, school nutrition ,school health services and school heath environment related items.

1.5 Research questions:

1. What are the weaknesses and strengths of SHP at the governmental schools in Hebron city?

2. Is there a difference between the students' and the teachers' responses regarding the implementation of SHP?

1.6 Feasibility of the Study

1. Ethical approvals were obtained from Al-Quds University and from the Palestinian Ministry of Education and Higher Education, and then the administrations of the schools were approached in order to facilitate the study.
2. The researcher is from Hebron city which facilitated the collection of the data.

1.7 Limitations of the Study

This study may have some possible limitations, such as:

1. Data collection depended on self-reported questionnaires; so the participants might be reluctant to state their points of view or they might exaggerate their answers (Eysenck , 2004).
2. Only five schools were included in the study due to time limitations and lack of research funding, so the generalization of the findings to other schools may be limited.

Summary:

- The main aim of the current study is to assess the SHP at the governmental schools in Hebron city according to the students' and teachers' perspectives.

- The chapter represents the study objectives, research questions, limitations and its feasibility.

Chapter Two

Literature Review

Chapter 2
Literature Review

Introduction:

Health is the key factor in school entry, in addition to the continued participation and achievement in school. As early as 1950, the World Health Organization (WHO) indicated that "to learn effectively, children need good health" (WHO, 1950, p 6). Education that provides children with academic skills and special knowledge, attitudes, and skills related to health is vital to their physical, psychological, and social well-being, thus education lays the basement for a child's healthy development through adolescence and across the entire life span (WHO, 1950).

There is abundant evidence to demonstrate that education and health are interrelated, and the health of children and adolescents constitutes a major factor affecting their capacity to learn (Allenworth, et al, 1997). Students who adopt health risk behaviors such as substance use, violence, and physical inactivity feel more alienated from school than their peers (Lee,2002). In addition, these behaviors are consistently linked to academic failure, and adversely affect students' school attendance, test scores and ability of attention in class (Lee,2002) . Also the school environment has a direct impact on the students' self-esteems, their educational achievement, and the health of both students and staff (Dunkle & Nash, 1991). In turn, the health-related factors such as hunger, physical and emotional abuse, and chronic illness can lead to poor school performance (Dunkle & Nash, 1991). Academic success can be considered as a good indicator for the overall well-being of youth and a primary determinant of adult health outcomes (Behrman and Lavy, 1994).

Because health and success are intertwined; it is worthwhile to establish healthy behaviors during childhood as it is easier and more effective than trying to change the unhealthy behaviors during adulthood (CDC, 2010 a). As school health program (SHP) targets children aged 6-18 years old which represents childhood and adolescence, it is necessary to discuss their growth, behavior and needs during their developmental periods.

This chapter is structured in 3 sections and explores in more depth the following issues:
Section one: The development of school-aged children and adolescents.
Section two: The major health problems of school aged children and adolescents:
Section three: School Health Program (SHP):

Section one: The development of school-aged children and adolescent:

This section focuses on two developmental stages, including the following:

- childhood phase(school-aged children) which include:
  - physical development
  - mental(cognitive) development
  - emotional and social development.
- adolescence phase which include:
  - physical development
  - cognitive development
  - psychological or emotional development
  - social changes

2.1 Childhood Phase (School-aged children):

School-aged children or the middle childhood are those 5 or 6 to 12 years of age (Parker & Click, 2008, Collins, 1984). This period is a stage of continuing growth and development for the children in which they will go through many changes in their physical, mental (cognitive) and social development (Collins, 1984). The genetic and environmental factors are the basic causes of developmental change . The genetic factors are responsible for cellular changes like overall growth, changes in proportion of body and brain parts, and the maturation of aspects of function such as vision and dietary needs**.** The environmental factors may include diet, poverty and disease exposure, in addition to the social, emotional, and cognitive experiences (Collins, 1984 ; Mercer , 1998) .

During the school-age years, children begin to establish habits for eating and exercise that stick with them for their entire lives. If they establish healthy habits, their risk for developing many chronic diseases will be greatly decreased. On the other hand, poor eating habits and physical inactivity during childhood set the stage for health problems in adulthood. So preventive measures undertaken during this period of growth may have a beneficial lifelong effect and may be more easily carried out than deferred until growth is complete (WHO, 1950).

Historically, the school age period has not been considered an essential phase in human development, and Sigmund Freud's theory named this phase of life as the latency stage, a time when sexual energy is still present but is directed into other areas such as intellectual pursuits and social interactions (Rodriguez, 2009). Freud suggested that no significant contributions to personality development were made during this period (Rodriguez, 2009). However, Erikson and Piaget who are considered as recent theorists , have mentioned the importance of this period in the development of self- confidence, inter-personal and social relationships, in addition to the development of cognitive skills (Rodriguez, 2009; Collins, 1984).

Children are very active during this period of time, as they engage actively in activities and are happy to take part in new ones. Their enthusiasm to learning means they often respond well to guidance about safety, healthy lifestyles, and avoidance of high-risk behaviors (Maccoby, 1984). Children, in this phase, are also learning the societal values and are working through numerous issues. These include the construction of self-concept, self efficacy (the knowledge of what to do and the ability to do it), and self awareness in which they become increasingly independent; learning their roles in the family, at school, and in the community(Collins, 1984). In addition they learn about relationships with peers, distinguished by the child's ability to fit in and socialize, and family relationships determined in part by the approval children gain from parents and siblings. In spite of the fact that many children appear to place a high value on the peer group, parents are who they still primarily look to for support and guidance. Other role models and supports in what is and is not appropriate are siblings (Collins, 1984, Brown &Wooldridge, 2008).

In summary, children maturity during this stage includes physical, mental (cognitive) emotional and social development which is discussed in more details below.

2.1.1 Physical Development of School-aged Children:

Despite the significant differences among individuals, the rate of increase in stature in school age children is similar and regular until the onset of puberty (Shonkoff,1984). School-age children have fairly smooth and strong motor skills such as running, jumping, riding bikes, hitting baseballs, skateboarding, skipping rope, learning musical instruments and others. However, their coordination, endurance, balance, and physical tolerance vary (Collins, 1984). There will be significant differences in height, weight, and build among children of this age range . The genetic background, in addition to nutrition and exercise, may influence this growth (Collins, 1984). So because physical development is outwardly visible, it affects perceptions of self and the way a child is viewed and treated by peers and adults (Parker & Click, 2008) . Also it can affect children's peer relationships. School age children constantly compare themselves to others, and physical differences are often the topic of discussion. While "late" developers may have the feeling of inferiority about their size, "early" developers may feel embarrassed among their peers (Charlesworth ,et al,2007) .

On average, children gain four to seven pounds in weight and one to four inches in height per year. At the age of ten or eleven the rate of growth begins to increase which is an indication that the child will soon enter puberty (Steinberge et al, 2010 ; Wooldridge , 2008). As a result of the physical growth and development, the body's needs for certain nutrients such as calories and protein are essential. On the other hand, as the children enter school and begin to participate in organized sports and other activities which result in an increase in physical activity, their appetite and food intake usually increases (Wooldridge, 2008). Consequently, without adequate and healthy nutrition, children will have difficulty concentrating on learning tasks, which will negatively affect their school performance and they might exhibit slower cognitive and behavioral development (Dunkle & Nash, 1991; Swingle, C ,1997). Also, this period is important for teething, since during this period, most of the changes from deciduous to permanent teeth take place so nutrition including sufficient fluorides, oral hygiene and dental care are essential in assuring healthy teeth (Wooldridge , 2008).

As the children grow older, many changes occur in their bodies when bones, muscles, fat and skin grow and develop. These changes happened quickly as they reach puberty. The starting of puberty heralds the onset of reproductive maturity and provides a biological marker for the onset of adolescent. The normal range of puberty onset is ages 8-14 in females and ages 9-15 years in males, with girls generally beginning two years earlier than boys (Collins, 1984, Rodriguez, 2009).

2.1.2 The mental (cognitive) development:

The cognitive development during the middle childhood phase is more noticeable than the physical development. It is known as the construction of thought processes which includes remembering, problem solving, and decision-making, starts from the childhood through adolescence to adulthood. Also, it refers to how a person perceives, thinks, and gains understanding of his or her world through the interaction of learned and genetic factors (Wells, 2006).

Piaget and Vygotsky developed two main theories on cognitive development respectively. However, the focus of these two theories differs. Piagets' theory focused on individuals in interaction with their environment, while Vygotsky proposed that development could only be understood with a social framework where thinking develops through the learning process (Blake &Pope, 2008). According to Piaget theory, the cognitive development occurs in a series of four distinct, universal stages and each is characterized by increasingly sophisticated and abstract levels of thought. These stages always occur in the same order, and each builds on what was learned in the previous stage. Theses stages are the sensorimotor stage (infancy),the pre-operational stage (toddlerhood and early childhood), the concrete operational stage (elementary and early adolescence) and the formal operational stage (adolescence and adulthood) (Blake &Pope, 2008).

During the sensorimotor stage, which often lasts from birth to age two, the children just begin figuring out how to make the use of their bodies. They do this by experiencing everything with their five senses, hence "sensory," and by learning to crawl then walk and

then grasp objects (Sigelman & Rider, 2009). While in the preoperational stage, which often lasts from age two to seven, children can solve a number of practical and concrete problems by the intelligent use of means-ends problem-solving, the use of tools, requesting objects, asking for things to happen, and other means. They can communicate well and represent information and ideas by means of symbols – in drawing, symbolic play, gesture, and, particularly, speech. These abilities continue to develop considerably during the preoperational stage, but there are some limitations to children's thinking during this period. Children tend to be egocentric (find it difficult to see things from another's point of view). They display animism in their thinking as they tend to attribute life and lifelike qualities to inanimate objects, particularly those that move and are active, such as the wind and the clouds, and sometimes trees and other objects. Their thinking tends to be illogical, and at times seems quite magical. Their thinking during the preoperational stage is lacking a logical framework for thought, and this appears during the concrete operations stage (Sigelman & Rider, 2009)

Children start school during the second stage (preoperational) and finish school when they complete the fourth and the final stage of cognitive development (formal operations) (Blake &Pope, 2008). In the third stage (concrete operations) the children have the ability to use logical and coherent actions in thinking and solving problems. They understand the concepts of permanence and conservation by learning that volume, weight, and numbers may remain constant despite changes in outward appearance. These children should be able to build on past experiences, using them to explain why some things happen. Their attention span should increase with age and they will able to focus on a task for about 15 minutes at age six to an hour by age nine. By the end of middle childhood, they enter the formal operations stage and become able to solve hypothetical problems using abstract concepts. School children rapidly develop conceptual thought, the ability to categorize complicated systems of objects, and the ability to solve problems (Blake &Pope, 2008).

The major theme in Vygotskys' theories is that social interaction plays a fundamental role in cognitive development. He pointed out that there is a gap between what the children know and what they can be taught. At any given stage of development, the child has a specific level

of understanding, a temporary maximum point. The point just beyond their understanding is the zone of proximal development. The problems and ideas in this zone are just a little too difficult for the children to understand on their own, but can be explored and understood with the help of adults. Adults can guide the children through these problems and ideas because adults have a firmer grasp of the more complex thinking involved(Blake &Pope, 2008).

2.1.3 Emotional and social development of school age children:

Changes in the physical and cognitive development of the school aged children are accompanied by changes in their social relationships with family and peers (Sigelman & Rider, 2009). During this period, peer friendships -that include friends at school, friends in the neighborhood, teammates or other co-participants in activities and near-age siblings- take on more prominent role than ever before (Newman and Newman, 2008) . Although children's peer relationships mature and become increasingly prominent during this phase, children will continue to model the choices, beliefs, and behaviors of the adults or older youth who are present in their family. They will also continue to derive most of their emotional support, nurturing, and affection from their families (Eccles,1999).

Erik Erikson is the most influential theorist of emotional development. He conceptualized development as a series of crises during which individuals must negotiate difficult, often conflicting tasks to maintain a developmental trajectory, which he termed the epigenetic model of development. He characterized developmental challenges as binary crises that force the individual to choose more desirable emotional stance. For example, the developmental task assigned to school aged children is described as industry versus inferiority. Industry refers to a drive to acquire new skills and do meaningful work. The experiences of middle childhood may foster or thwart the child's attempts to acquire an enhanced sense of mastery and self-efficacy (Newman and Newman, 2008).

Erikson believes that the fourth psychosocial crisis is handled, for better or worse, when he viewed the elementary school years as critical for the development of self-confidence. Ideally,

elementary school provides many opportunities for children to achieve the recognition of teachers, parents and peers by producing things- drawing pictures, solving addition problems, writing sentences, and so on (Newman and Newman, 2008). The children who, because of their successive and successful resolutions of earlier psychosocial crisis, are trusting, autonomous, and full of initiative, and will learn easily enough to be industrious. However, the mistrusting ones who are ridiculed or punished for their efforts, or if they find they are incapable of meeting their teachers' and parents' expectations, will develop feelings of inferiority about their capabilities (Newman and Newman, 2008).

2.2 The Adolescence Phase:

Adolescence is known as " a transitional period between late childhood and the beginning of the adulthood, and marks the beginning of the reproductive lifespan in humans" (Choudhur, et al, 2006, p.165). This time period is divided into three stages, including the early stage (10 to 13 years of age) which is an awkward time marked by concrete problem solving, a yearning for approval of peers, and emotional lability, while during the middle stage (14 to 16 years of age) the adolescents develop more interest in their bodies, their thinking becomes more abstract and idealistic, and feelings of rebellion are displayed in dress styles, hairstyles, slang, and fascination with rock music and rock stars. In the late adolescence (17 to 20 years of age), the adolescent feels more comfort with body maturity, greater reliance on friends than family for social contacts, sexual intimacy, an increased ability to deal with interpersonal complexities, and the ability to make mature and independent judgments (Feldman& Elliott,1999).

In general, the adolescence phase is characterized by physical, psychological (mental and emotional), and social challenges which may cause conflict or positive personality development (Choudhury et al ,2006 ; Geldard & Geldard,2009). As discussed in this section.

2.2.1 The physical development:

Adolescence begins with the maturation period that is called puberty which refers to the biological events that surround the first ejaculation in males and the first menstruation in

females (Geldard& Geldard, 2009). This period usually starts at 7 to 13 years of age in girls, and 9 to 14 years of age in boys. This period distinguishes among males and females by developing sexual characteristics, however, the secondary sexual characteristics become visible during prepubescent period (Feldman & Elliott, 1999).

The development of breast buds and sparse pubic hair are the first signs of puberty among girls, which occur between ages of 8-13 on average, and the menarche (the beginning of menstrual periods), which occurs about 2 years after initial pubescent changes are noted. It may occur as early as 10 years of age , or as late as 15 years of age (Stang & Story,2005) .

The first signs of puberty among males are the testicular enlargement and change in scrotal coloring that occur between the ages 10-14 on average . Adult size and shape of the genitals is typically reached by age 16 to 17 years. Pubic hair growth begins at about age 12, and reaches adult distribution patterns at about 15 to 16 years of age. A concurrent rapid growth in height occurs between the ages of about 11 and 16 to 18, peaking around age 14 (Stand et al , 2008; Stang & Story,2005) .

The production of sexual hormones increase significantly during puberty, resulting in changes to the body and triggering an increase in sexual arousal, desire and urge in both males and females(Geldard & Geldard,2009). During early adolescence, it is typical for people to form close relationships with friends of the same sex because they feel secure with them, and then gradually moves into the later stage of adolescence. Changes in cognitive, moral and social thinking differentiate these stages (Geldard & Geldard,2009). By late adolescence, with the acceptance of the new physically and sexually mature body, there is a gradual move, in most young people, toward heterosexual relationships. Many young people during the late stage are psychologically ready for an active sexual life which includes intercourse (Geldard & Geldard, 2009). The increase of the sexual hormones may also influence the adolescences' emotional state, acting in combination with other major changes, such as changes in social relationships, beliefs and attitudes and self-perception. Coping with body changes may be disturbing and worrying to the person, and with the emergence of sexual urges leading them into the exploration of new relationships produce new social challenges (Geldard& Geldard, 2009).

While the maturation process is normal, it can cause difficulties for the individual, especially where a young person is precocious in puberty or if puberty is significantly delayed. This may lead to an uncomfortable level of stress followed by a lowering of self-esteem and self-concept, leaving the person feeling awkward and lacking self-confidence. Happening at different ages and different rates, biological changes like growth in height, weight, strength and changes in appearance for both girls and boys may be issues for adolescents who feel embarrassed, self-conscious, and awkward and out of step with peers who are developing at a different rate (Geldard& Geldard, 2009).

Some adolescents mature earlier or later than average, with a variance effect. While late-maturing boys may suffer socially induced inferiority, early-maturing boys may enjoy athletic, social, and community advantages but they are also under more pressure to act older than their age and are at a heightened risk to engage in antisocial activities at a young age (Rice & Dolgin, 2008). While the early-maturing females tend to feel awkward and self-conscious, feeling out of step with their peers, the late maturing girls are at a social disadvantage. They look like little girls, resent being treated as such, and are envious of their friends who have matured. These social disadvantages are temporary and are overcome when maturation takes place (Rice & Dolgin, 2008).

During this period, individuals begin to explore the world and make decisions about their future roles, incorporating the norms and values of their societies. However, living under conditions of conflict can interfere with normal identity development and can radically influence psychosocial health and their outlook on the future. Adolescents growing up in such conditions are faced with lack of security and dissolution of social structures and factors that threaten their physical, emotional, and social development (Siegel& Wallander, 1995).

2.2.2 Cognitive development:

In addition to biological changes, cognitive changes take place in adolescence. The adolescent develops a capacity for abstract thinking, learns to think creatively and critically, discerns

new ways of processing information and discovers how to think about relationship issues (Geldard& Geldard, 2009).

Adolescents, ages 12 through 18, are at the "formal operations" stage of Piaget's cognitive development theory in which the individual's thoughts start taking more of an abstract form and the egocentric thoughts decrease (Rider & Sigelman,2008). This allows the individual to think and reason in a wider perspective by an increased independence for thinking through problems and situations. The thoughts, ideas and concepts developed at this period of life greatly influence one's future life, playing a major role in character and personality formation (Newman & Newman, 2008).

2.2 .3 The psychological or emotional development:

The biological and cognitive changes have a significant impact on psychological functioning. The most important psychological task for the adolescent is the formation of a personal identity, while failure to achieve a satisfying personal identity might lead to negative psychological implications (Geldard&Geldard, 2009) . Erik Erikson described adolescence as a period of identity formation (Hazen et al,2008) and exploring different roles, values and skills (Rodriguez,2009). He refers to this stage as an option between ego identity formation and role diffusion, and in the case that the adolescents do not form a coherent sense of self and values, they will fail to achieve a consistent sense of identity as they progress into adulthood (Hazen et al,2008).

Moreover, one of the major goals of psychological development in adolescence is the development of a healthy and stable self-image. Poor self-image associates with many problems that can arise during adolescence, including difficulties in peer and family relationships, risky behaviors, poor school performance, depression, unsafe sex and substance abuse. Parents and other authority figures like schools can help promote a positive self-image through the model that they set in their own lives and through demonstrating acceptance of the adolescent (Hazen et al , 2008).

With the support and guidance of caring families, schools, and communities, many adolescents pass successfully through these years. Others, who may be involved in risky

behaviors that result in harmful outcomes, are not so successful In general, adolescents are primarily physically healthy but the major threats to their health are related to such social and behavioral factors such as poverty, unstable family situations, violence, alcohol, tobacco, and other drug use, unhealthy sexual behaviors, eating disorders and motor vehicle crashes (Maccoby, 1984). Many of these threats can be prevented or reduced by health promotional efforts to support healthy behaviors, as well as connections to families, schools, and other caring adults. These connections can be effective in decreasing the risk of unhealthy outcomes among adolescents (Siegel& Wallander, 1995).

2.2.4 Social changes occur during adolescence:

Important changes in the adolescent's social relationships accompany the physical, cognitive, and emotional transitions. These changes involve family and peer relationships in addition to schools (Eccles & Gootman, 2002).

Adolescent- parent relationships go through significant transformations during adolescence in which the desire for autonomy and for more independence increase (Eccles,1999). This desire may lead to raise family conflict (e.g., arguments about time spent with peers) and involvement in risk behaviors such as affiliation with antisocial peers and engagement in delinquent activities (Smetana et al, 2006 ; Allison,2000).

Adolescents who have a good relation with their parents and whose parents provide support for their behaviors, interest and activities, will have numerous positive developmental outcomes such as a higher self esteem, a stronger sense of identity, greater social competence and a fewer behavioral problems than those having conflicts with their families or parents (Sigelman & Rider, 2008 ; Steinberg & Morris, 2001). While the presence of conflict in the parent-adolescent relationship may lead the adolescents to think negatively about themselves, and can even result in thinking about suicide (Lerner et al, 1999). On the other hand, parents who place a high value on academic achievement often have children who do well in school (Meece, 2009).

Moreover, children tend to model their parents' behaviors. Substance-abusing and tobacco use among youth often come from families with histories of drug and alcohol problems (Meyers, 1995). For example, a cross-sectional study was conducted by Shamsuddin & Haris (1997) in India to assess the prevalence of cigarette smoking among male secondary school children and assessed their family influence especially that of their fathers' smoking habits on their current smoking habits. The sample included 460 males aged 15 -16 years from six secondary schools. The data was collected by self reported questionnaires which were filled by the participants. The results showed that the prevalence of cigarette smoking among male students was 33.2% . For smokers, 60.7% had fathers who smoked. Also, 66.7% of smokers had siblings who smoked in contrast to 48.6% siblings of non smokers who did the same. The associations between father's and sibling's smoking habit were found to be statistically significant. In general, this study showed that the smoking habits of family members especially that of the father's is significantly associated with students' current smoking habits (Shamsuddin& Haris, 2000).

As adolescents grow older, the family becomes less important for the socialization process and the influence of friends increases (Eccles & Gootman, 2002). In this phase, young people between 12 and 18 years old typically come together in more or less fixed groups, in which adult behavior is practiced. Within these groups, a sub cultural identity is frequently formed which helps to distinguish their members from the culture and norms of the parent's generation (Settertobulte et al, 2001).

As the adolescent stage is often marked with increased friendly relationships, during this phase, the adolescents seek autonomy from their parents, turn to their peers to discuss problems, feelings, fears, and doubts, thereby, increase the salience of time spent with friends (Shaffer, 2008). The nature of peer groups changes during the adolescence period. In early adolescence peer groups are single-sex but by the middle adolescence, mixed-sex peer groups are more prevalent. During the late adolescence, peer groups start to disintegrate as individuals spend more time as part of a romantic couple (Brown, 1990). Susceptibility to peer pressure increases during early adolescence, peaks around age 14, and declines thereafter (Spencer, 2010).

Peer groups offer its members the opportunity to develop various social skills, such as empathy, sharing and leadership. Moreover, these groups can have positive influences on individual academic motivation and performance. However, they may have negative influences and lead to an increase in experimentation with drugs, drinking, smoking, and other risk behaviors (Swanson et al ,2010).

Finally, school is a social place where students spend the majority of their time and interact with others. When students feel safe and supported, there will be academic achievement and focus on learning (Heath & Sheen, 2005). In addition, schools are considered as one of the principle formal community institutions which play a role in cultural transmitting and the development of both social and academic competencies among children and youth (Allensworth et al, 1997). On the other hand, they are the places where youth are exposed to different lifestyles, risky health behaviors, bullying or aggressive behavior of other students (Shaffer, 2008). Bullying is a pervasive problem that has been linked to both immediate and long-term detrimental effects for students. Victimization due to bullying is correlated with student absenteeism, poorer academic achievement, social isolation, and internalizing problems such as depression, anxiety, and poorer psychosocial adjustment (Slee & Rigby, 1993, Heath& Sheen, 2005).

2.3 Section two: The major health problems of school aged children and adolescents:

Introduction:

The Centers for Disease Control and Prevention (CDC) identified six categories of health-risk behaviors priority that are associated with mortality, morbidity disability and social problems among youth and young adults which are 1) behaviors that contribute to unintentional injuries such as motor vehicle crashes, and violence such as homicide and suicide, 2) tobacco use,3) alcohol and other drug use, 4) sexual behaviors that contribute to unintended pregnancy and sexually transmitted diseases (STDs) such as human immunodeficiency virus (HIV) infection, 5) unhealthy dietary behaviors, and 6) physical inactivity. These behaviors vary in prevalence from one country to another (Centers for Disease Control and Prevention, 2009). For example, in the USA, the Youth Risk Behavior Surveillance System (YRBSS) was implemented by the Centers for Disease Control and Prevention (CDC) to assess the health-risk behaviors among

youth**.** The sample consisted of high school students aged 10–24 years in grades 9–12 in the United States. The reporting period covered from September 2008 to December 2009. The sampling frame for the 2009 national YRBS consisted of all regular public and private schools with students in at least one of grades 9–12 in the 50 states and the District of Columbia. The data was collected by self- administrated questionnaire filled in by students. The results indicated that many high school students are engaged in behaviors that increase the leading causes of death among them. For example, 9.7% of high school students rarely or never wore a seat belt when riding in a car driven by someone else, 28.3% of them rode in a car or other vehicle driven by someone who had been drinking alcohol, 17.5% had carried a weapon, 41.8% had drunk alcohol, and 20.8% had used marijuana. During the 12 months before the survey, 31.5% of high school students had been in a physical fight and 6.3% had attempted suicide. Also, 34.2% were currently sexually active, 38.9% of them had not used a condom during their last sexual intercourse, and only 2.1% had ever injected an illegal drug. Furthermore, 19.5% of the participants smoked cigarettes, 77.7% had not eaten fruits and vegetables five or more times per day, 29.2% had drunk soda or pop at least one time per day, and 81.6% were not physically active for at least 60 minutes per day on all the seven days. Finally, findings showed that one-third of the respondents attended physical education classes daily, and 12.0% were obese (CDC,2010 b) .

This section discusses in more details the major problems that students may face during their development including:

- Injuries and violence
- Tobacco use(smoking)
- Alcohol or drug use
- Sexual problems
- Nutritional problems
- Physical inactivity

2.3.1 Injuries and violence:

Injuries are either intentional such as assaults, homicide and suicide or unintentional such as motor vehicle bicycle and pedestrian-related crashes, drowning, fires, fractures, burns and falls. The injuries from road traffic, drowning, war, interpersonal violence, falls, fires and poisoning

are among the 10 leading causes of death among children in the age group (5–19) years in the low and middle income countries of the Eastern Mediterranean Region (Peden et al, 2008). In the United States, the most fatal injuries in school-age children are motor vehicle crashes (58%), drowning (10%) and fires and burns (8%). The most common nonfatal injuries resulting in hospitalization are caused by bicycle, by falls and pedestrian-related crashes (Schnitzer, 2006) .

Most injuries especially the unintentional ones are prevented by modifying the child's environment such as the use of stair gates and having parents engage in safety practices such as keeping matches or lighters out of reach of children. Effective injury prevention methods include the use of childproof caps on medications and household poisons, age-appropriate restraints in motor vehicles (car seats, booster seats, seat belts), bicycle helmets, and a four-sided fence with a locked gate around residential swimming pools (Peden et al,2008; Schnitzer, 2006).

The injury rates and its consequences vary from country to another. For example, a cross-national survey was conducted by Molcho et al (2005) in selected countries such as Belgium, Canada, England, Hungary, Lithuania, Poland, Ireland, Sweden, Switzerland and the USA to present a cross-country comparison of injury rates, contexts and consequences. The sample consisted of 52955 schoolchildren aged (11, 13 and 15) years old from these countries. The data was collected by self-administrated questionnaire. The results showed that a total of 41.3% of the participants were injured and needed medical treatment in the past 12 months. The injury rates among boys were higher than girls, 13.3% reported activity loss due to injury and 6.9% reported severe injury consequences. Also, the fighting accounted for 4.1% of injuries. Moreover, the injury rates varied among the 11 countries. For example, in Ireland, about half of the students reported at least one medically attended injury, while in Poland only one in four children reported such an injury during the same time frame. Boys experienced more injuries than girls in all 11 countries. In the United States, Switzerland and Lithuania, injury rates were lower among older children compared to younger ones, whereas in Canada and Belgium the opposite trend was found as the rates were higher for older students than for younger ones. Injury rates in Ireland remained stable across the three age groups (Molcho et al, 2006).

In Palestine, the injuries can be considered as one of the leading causes of death among children. For example , it was found that 52% and 23% of the total death of children aged (1-4) and (5-19) years old are caused by injuries . For example, a cross sectional study was conducted by Shaheen & Edwards (2007) to identify the types of injury that lead to death among Palestinian children and to investigate whether the causes of injury mortality were differ from children in the United Kingdom .The sample consisted of all children who aged 0–19 years and were died from injury between 2001 and 2003. The data was obtained from the Palestinian Health Information Centre and from the Palestinian Ministry of Health which located in the Gaza Strip. Child deaths caused by injury in England and Wales were obtained from the Office for National Statistics, UK. The results showed that annual injury mortality rate among the Palestinian children was almost 3 times more than that in England and Wales. In all of them , the overall annual injury mortality rate was higher among boys than girls and the highest rate was among children aged (15–19) years. The most common injury cause among Palestinian children aged (15–19) years were accidents caused by firearms missiles followed by transport accidents, while the most common causes of death among the Palestinian children aged (10–14) years were accidents caused by firearms missiles, followed by transport accidents. Also, the leading causes of death among those aged (5–9) years were transport accidents, accidents caused by firearms missiles and falls. In England and Wales, the leading causes of death among children aged (15–19) years were transport accidents, event of undetermined intent, and intentional self harm. Transport accidents were also the most common cause of deaths among children aged (10–14) and (5–9) years (Shaheen & Edwards, 2008).

From the public health problems that are considered very serious are the injuries in the school environment and it has been estimated that 20% of the injuries among school-aged children happen on school premises (Scheidt, et al,1995). So the role of schools is very important in teaching the students the skills needed to practice and reinforce safe behaviors that prevent injuries at home, at work, at play, in the community and throughout their lives (Schnitzer, 2006) . For example, one follow up study was conducted by Esmaeili et al (2007) to assess the risk and the patterns of injuries taking place inside the secondary schools in the

Iranian community. The sample consisted of 3371 pupils studying in 26 secondary schools of the Shar-babak district in Iran. This sample was followed up for one academic year and all injuries were recorded. The findings showed that seventy five cases of injury were reported giving an overall one-year incidence rate of 22.2 per 1000 person-years-at-risk. The maximum incidence was reported among year three pupils in both genders and it was 33 per 1000 for boys and 19.8 per 1000 for girls. "Falls" was the most common cause of injuries, and legs and hands were the main injured body area (56%).The majority of injuries were "cured without rest" and only five pupils were admitted to the hospital (Esmaeili et al, 2007).

2.3.2 Tobacco use (smoking):

Smoking has been identified by the World Health Organization (WHO) as the second leading cause of mortality worldwide. It is responsible for the death of one in ten adults worldwide (about 5 million deaths each year). If current smoking patterns continue and remain unchanged, the number of annual tobacco-related deaths is expected to double (10 million deaths each year) by 2020 and seventy percent of such deaths will occur in the developing countries (WHO, 2008).

Moreover, smoking is considered as the fourth most common risk factor for diseases worldwide and it is one of the most important contributors to many forms of cancer particularly lung cancer, cancers of the larynx and mouth, and pancreatic cancer, heart disease, respiratory disorders, susceptibility to infectious diseases, and other noncommunicable diseases (WHO,2008). Also, smoking creates cognitive dysfunction which increased the risk of Alzheimer's disease and a decline in cognitive abilities, reduced memory and cognitive abilities in adolescent smokers, and brain shrinkage (cerebral atrophy) (Brannon & Feist, 2009)

Many studies investigated the prevalence of smoking among school aged children and adolescents. For example, a cross sectional study was conducted in Iran by Ziaaddini et al (2007) to assess the prevalence and motivation of smoking among Iranian junior and senior students. The sample consisted of 3072 participants (1891 males and 1181 females) 68.5% of the students were in the last year of high school (juniors) and 31.5% were in college (seniors)

from Kerman city in Iran. Data was collected by self reported questionnaire. The finding showed that 4.9% were cigarette dependency, 6.4% had used it occasionally during the last six months and 11.5% had used it at least once in their life. Out of all the cigarette users, 80.6% had experienced smoking before the age of 15, and the boys smoked significantly(6.6%) more than girls (2.1%). Furthermore, 24.9% of the male participants stated that the most important motivations of tobacco use were the smoking of the peer group while 53% of the female respondents indicated that they believed that smoking is fashionable and improves their self-esteems (Ziaaddini et al, 2007).

Another survey was conducted by Erbaydar et al (2005) in Turkey to examine the social determinants of smoking among adolescents attending school and/or work. The sample consisted of 6012 adolescents aged (13-17) years in 15 cities, recruited from public and private schools, vocational training centers and work places, of whom only 72.8% attended school, 11.0% attended school and work, and 16.2% only work. The data was collected by self reported questionnaire. The findings revealed that the rate of the current smoking for the males in general was 25.2%, 10.5% for females, 13.3% for students, 31.7% for those attending school and working and 43% for those who were working only. In addition, boys whose mothers had very low education were more likely to smoke than other boys, while girls whose mothers had higher level of education were more likely to smoke than other girls (Erbaydar et al, 2005).

Furthermore, a cross-sectional study was conducted by Bolzán & Peleteiro (2003) in Argentina to investigate the prevalence of smoking among pre-teenagers (11 and 12 years of age) and to identify the risk factors of smoking. The sample consisted of 2,386 schoolchildren of the 7th to the 9th grades from 19 schools and the data was collected by self-reported questionnaire. The results showed that the prevalence of smoking was 15.1%, ranging from 7.9% in the 7th grade to 23.9% in the 9th grade. The mean age at the start of smoking was 11.7 years. Peer and family pressure were statistically significant risk factors for initiating this habit (Bolzán & Peleteiro, 2003).

In Palestine and according to the Palestinian Central Bureau of Statistics (PCBS), the prevalence of smoking among persons aged 12 years and over is 19.8% (37% among male and 2.2% among females). 4.0% of smokers were within the age group of 10-18 years including 7.3% males and 0.6% females. The rate was higher in West Bank in comparison with Gaza Strip (5.3% and 2.1% respectively) (PCBS, 2007)

2.3.3 Alcohol and drug use:

Alcohol and drug use is considered a risky behavior for adolescents due to its potential for negative consequences. It is associated with a series of risk behaviors, such as the risk of involvement in accidents and other unintentional injuries (Pechansky et al, 2004). It is particularly linked to sexual risk-taking behavior such as early first intercourse, unprotected sexual intercourse exposing the adolescent to sexually transmitted infections (STI) and HIV, teenage pregnancies and sexual intercourse with multiple partners (Tapert , et al ,2001; CDC,2010b)

For example, a population-based study was conducted by Lavikalinen et al (2009) in Finland to examine the relationship between an adolescent's sexual behavior and drinking alcohol**.** The sample consisted of 100 790 adolescents in both eighth and ninth grades. The results indicated that one-third of the girls and 27% of the boys in the ninth grade had engaged in sexual intercourse at least once and 18% of the male versus 16% of the females in the eighth grades did so. As 80% of the adolescents reported having used contraception during their intercourse, the proportion of unprotected intercourse varied between 16% and 24% in eighth and ninth grade (boys/girls). Boys reported more the non-use of contraceptives than girls . Moreover, the results indicated that the higher level of drinking alcohol was associated with an increase in the engagement in unprotected intercourse (Lavikalinen et al, 2009).

The increase of alcohol consumption in adolescence is associated with poor academic performance, learning difficulties and damage in memory which is a fundamental function of the learning process. In turn, the school performance will decrease which may lead to the decrease of self-esteem, which represents a risk factor for experimentation, consumption and abuse of alcohol and drugs (Pechansky et al, 2004). Also, it has the harmful health and social

consequences such as neglecting responsibilities, getting into fights or arguments, missing school, driving after drinking and engaging in suicidal behavior. Some long-term effects of alcohol use during adolescence include addiction, damage of liver, kidney, stomach, and intestines, brain damage, memory loss and depression (Miller et al, 2007, Siegel & Wallander, 1995). In the USA, the underage drinking is widely recognized as a leading public health and social problem that is associated with the three leading causes of death among youth (unintentional injury, homicide, and suicide) (Miller et al, 2007).

Among the most important factors that act both as enabling and reinforcing factors are the drug behavior and drug-related attitudes of peers. Adolescents tend to increase use of drugs and alcohol drink due to the influence of friends, and they also tend to choose friends who reinforce their own drug norms and behaviors (Jayousi ,2003). For example, a cross sectional study was conducted by Morton et al (2001) in Washington D.C. to assess the effect of peer influences on adolescent substance use. The sample consisted of 4,263 students from 6^{th} to 8^{th} -grade and 49.1% were boys and 50.9% were girls. The data was collected by using self reported questionnaire. The results showed that the prevalence of smoking was 10.4% and increased from 3.8% in the sixth grade to 9.1% in the seventh grade and 17.8% in the eighth grade. Also, drinking prevalence was 12.6%, increasing from 6.5% in the sixth grade to 11.1% in the seventh grade and 19.6% in the eighth grade. Also, the results revealed that peer pressure was positively associated with smoking and drinking. Students who had been offered a cigarette (peer pressure) were 1.78 times as likely to smoke, and those who had been offered alcohol were 1.48 times as likely to drink, than students who had not been offered these substances. Those with one friend who smoked were 2.73 times as likely to smoke and those with two or more friends who smoked were 9.46 times as likely to smoke as those with no friends who smoked (Morton et al, 2001).

In Palestine, very few studies were conducted to assess the prevalence of alcohol and drug use due to the lack of reliable data and statistics. One study was conducted by Jayousi (2003) to detect the prevalence of drug abusers in north Palestine (Tulkarm). The data was collected by a self reported questionnaire. The sample was consisted of 315 respondents and 76.8% were men. One third of the population aged 21-25 years and one fourth of them were younger than

21 year . 62.2% of the participants were single, 32.4% were married and 8 persons (2.5%) were divorced. 33% of the population were city inhabitants and 39.7 were from a camp, and 26.7were from village. The sample was selected randomly from different places (the university, work places, homes and café shops). The result indicated that 52% of the married were smokers, 34.8% of the single respondents were smokers, and 4 out of 8 divorced were smokers. 5.9%, of the camps respondents, 3.9% of the city population and 3.8% of village population reported drug abuse. There were 66 smokers of which 6 began their smoking habit by the age of 12 years, 24 by the age of 15 years, and 36 persons began to smoke by the age of 19 years. Also, of the 6 drug abusers : one of them began to abuse at the age of 13 years, while other three by the age of 17 years, another one by the age of 19 years and the last one by the age of 30 (Jayousi, 2003).

2.3.4 Sexual behavior

Adolescent sexuality worldwide is a topical issue in sociological discourse and for the concern with unfavorable sexual and reproductive health indices, including unintended teenage pregnancies, unsafe abortions, early childbearing, sexually transmitted diseases (STDs) and the Acquired Immune Deficiency Syndrome (AIDS) (CDC, 2010 b).

Risky sexual behavior is more likely to occur when adolescents use alcohol and/or drugs. In the USA, the adolescents account for 25% of the 12 million new cases of sexually transmitted diseases (STIs) each year. Young people who begin to have sexual intercourse in early or middle adolescence are more likely to develop sexually transmitted diseases **(**STIs) than those who postpone intercourse until later adolescence or adulthood. According to the 2009 Youth Risk Behavior Surveillance (YRBS) survey, the onset of sexual behavior for most students was before the age 13 and it was higher among male (10.1%) than female students (4.0%). Also, the finding showed that 34.2% of the students were currently sexually active from which 38.9% had not used a condom during their last sexual intercourse (CDC, 2010b).

2.3.5 Nutritional status:

Malnutrition is one of the world's most serious development problems. The causes of malnutrition are lack of access to food, health services and a sanitary environment, and people's caring practices for their children, eating behaviors, and personal hygiene. The risk of malnutrition is especially high during the fetal development and during a child's first two years of life (Levinson and Bassett, 2007).

The chronically undernourished children attain lower scores on standardized achievement tests, especially tests of language ability (Hinton et al, 1990). When children are hungry or undernourished, they have difficulty resisting infection and therefore are more likely than other children to become sick, miss school, and to fall behind in class (Hinton et al, 1990; Troccoli, 1993). They have difficulty to concentrate, which may interfere with learning, and they have low energy, which may limit their physical activity (Troccoli, 1993).

children begin to spend more time away from home, during the school age years, either at school or with their friends. Consequently, factors outside of the home start to influence food choices, which can have either a positive or negative impact on nutrition. In many cases, peers reinforce poor food choices and contribute to negative body image. As a result, nutrition education messages provided at school can help children understand the importance of good nutrition (Brown , 2008).

In general, adequate nutrition plays an essential role in assuring that children reach their full potential for growth, development, and health. If school age children are not at the proper nutritional status, they can experience problems such as iron deficiency anemia, malnutrition, eating disorders, dental cavities and the high prevalence of obesity. Therefore, adequate nutrition and the establishment of healthy eating behaviors in addition to the participation in regular physical activity can prevent immediate health problems as well as promote a healthy lifestyle. This may reduce the risk of the child developing a chronic condition, such as obesity, type 2 diabetes, hypertension, osteoporosis, some forms of cancer and cardiovascular disease later in life (Smart &Smart, 1978). Moreover, eating breakfast during the school-age years has been associated with improved academic performance and reduced the absences of students (Murphy et al,1998). For example, a cross-sectional and longitudinal study was conducted by Murphy et al (1998) in USA to determine if a relation exists between the participation in breakfast program and the academic functioning in school aged children. The

sample consisted of 1627 students from 3 schools (one public school in Philadelphia and 2 public schools in Baltimore) .Data was collected by in depth interviews. The findings indicated that (38%) of the students who ate a school-supplied breakfast as "often or sometimes" had significantly higher math scores and decreases in the rates of school absence than those(62%) of the participants who ate a school-supplied breakfast as "rarely or never"(Murphy et al , 1998).

Also, as discussed previously, during adolescence growth is faster than at any other time in an individual's life except the first year. The cumulative effects of childhood health and nutrition are reflected in the Adolescents' health status. So healthy and adequate nutrition during adolescence is critical to cover the deficits suffered during childhood, healthy and adequate nutrition during adolescence is critical and should meet the demands of physical and cognitive growth and development, provide adequate stores of energy for illnesses and pregnancy, and prevent adult onset of nutrition-related diseases (Hider, 2006). Poor nutrition, however, will increase vulnerability to infections and diseases, and increase the severity. When infection and poor nutrition interact over time, growth may also be retraded (Evans, 2009).

In Palestine, it was found that the Palestinian adolescents have irregular meal patterns and low intake of fruits, vegetables, and milk. For example, a cross-sectional study was conducted by Mikki et al (2005) to investigate the dietary habits of the Palestinian adolescents in three governorates in Palestine (Ramallah, Hebron and Nablus). The sample consisted of 2952 students (1364 boys and 1588 girls) aged 13–15 years from 96 school of the eighth and ninth grade classes (34 in Ramallah, 31 in Hebron, and 31 in Nablus). The Data was collected by self-reported questionnaires. The results showed that only 26% of students had three meals daily, 26% of boys and 51% of girls had breakfast only once or twice per week or less and 25% drank milk daily (33% of boys versus 18% of girls). Around three-quarters ate vegetables daily (73% of boys versus 74% of girls) and daily fruit consumption was equally common in boys and girls (59% versus 55%). Daily intake of salty snacks was more common in girls than in boys (62% versus 50%) whereas daily intake of regular soft drinks was more common in boys (40% versus 28%). Also, the daily intake of sweets was more common in girls than in boys (49% versus 42%) (Mikki et al, 2010).

Finally, another cross-sectional survey was conducted by Al Sabbah et al (2004) in Palestine to describe the food habits among adolescents. The data was collected by self reported questionnaire and the sample consisted of 8885 students (53% were from the West Bank and 47% from the Gaza Strip). 49% were boys and 51% were girls from grades 6, 8, 10 and their ages ranged between 12 and 18 years. The results showed that 45% of the participants reported consuming vegetables, followed by sweets (35%), fruits (31%) soft drinks (24%), milk (22%), and meat and chicken (16%) daily. About half of the respondents (45%) reported taking breakfast more than 4 days a week during schooldays which was positively associated with the father's education. Adolescents from the West Bank eat fruit, sweets, meat and chicken more often and drink soft drinks more often than adolescents of Gaza while adolescents from Gaza eat vegetables more. Girls reported more daily consumption of fruit, vegetables and sweets than boys and less consumption of soft drinks, milk, meat and chicken. While boys were physically more active than girls, girls reported doing more homework. Consumption of fruit and milk was positively associated with parents' education, while consumption of meat, chicken and soft drinks was positively associated with mother's education only (Al Sabbah, et al, 2004).

2.3.6 Overweight and Obesity:

Adolescents tend to eat more meals away from home than younger children. They are also heavily influenced by their peers. Meal convenience is essential to many adolescents and they may be eating too much of the wrong types of food (i.e., soft drinks, fast-food, processed foods, chips), which contribute in increasing the prevalence of obesity among them (Brown, 2005).

The prevalence of overweight and obesity is commonly assessed by using body mass index (BMI), which is defined as the weight in kilograms divided by the square of the height in meters (kg/m2). A BMI over 25 kg/m2 is defined as overweight and a BMI of over 30 kg /m2 as obese (WHO, 2003).

Obesity among children is a problem in both developed and developing counties around the world. Obesity in childhood might lead to life threatening chronic diseases and to negative psychological consequences. Moreover, overweight children have a 70 percent chance of becoming overweight adults, and they suffer from psychological stress, poor body image, and low self-esteem which may affect their ability to succeed at school (American Dietetic Association, 1999, Gentry & Campbell, 2002).

A lifestyle with unhealthy dietary behaviors such as eating outside homes, drinking sweetened beverages, eating large quantities and taking frequent meals and snacks may interact with each other and contributing to increased calorie intake, accumulating over time and leading to obesity (Onge, et al,2003 ; Nielsen & Popkin, 2003; Krebs,et al, 2007; Ludwig, et al, 2001). Also, physical activity, heredity, the social and cultural environment are associated with the occurrence of obesity. In addition, the morbidity and mortality rates increase with the increase in bodyweight. As discussed previously, many chronic, noncommunicable diseases are positively associated with obesity, type 2 diabetes mellitus, hypertension, cancer and cardiovascular disease. Therefore, prevention and control of obesity can play an important role in reducing the risk for chronic diseases (Waters et al, 2010).

The prevalence of obesity and being overweight is increasing worldwide although the proportion varies from country to country. For example, National Health and Nutrition Examination Survey was conducted by Ogden et al (2003-2004) to provide current estimates of the prevalence and trends of overweight among children, adolescents and adults. A nationally representative sample of the US population was obtained from the National Health and Nutrition Examination Survey (2003-2004) consisting of the analysis of height and weight measurements of 3958 children and adolescents aged 2 to 19 and 4431 adults aged 20 years or older. In addition, another data from the National Health and Nutrition Examination Survey obtained in 1999-2000 and in 2001-2002 were to be compared with the data of 2003-2004. The results showed that the prevalence of overweight among children and adolescents and obesity among men increased significantly during the 6-year period from 1999 to 2004. As a result, in 2003-2004, 17.1% of US children and adolescents were overweight and 32.2% of adults were obese. Tests for trend were significant for male and female children and

adolescents indicating an increase in the prevalence of overweight in female children and adolescents from 13.8% in 1999-2000 to 16.0% in 2003-2004 (Ogden et al, 2004).

Another cross national study was conducted by Karayiannis et al (2003) to provide national estimates for overweight and obesity among Greek school-aged children and adolescent. The sample consisted of 4299 students of age 11-16 (51.3% girls and 48.7% boys) from all types of schools, private, public, night and technical schools. A self-reported weight and height data were collected. The results showed that 9.1% of the girls and 21.7% of the boys were classified as overweight, whereas the prevalence of the obesity was1.2 % in girls and 2.5% in boys. Also, the prevalence of combined overweight and obesity was higher in urban areas(16% and 1.6 % respectively) compared to rural ones(13.1% and 1.2%), and the higher rate was in private schools(17.9% and 4.1% respectively) compared to the public schools (15.1% and 1.7%) (Karayiannis et al, 2003).

In addition, a cross sectional study was conducted by Mozaffari & Nabaei in (2002) in Iran to study the prevalence of overweight and obesity among Iranian schoolgirls and to identify the risk factors that lead to obesity. The sample consisted of 1800 females between 7-12 years old. The findings showed that 13.3% of the girls were overweight and 7.7% were obese. The study indicated that the tendency towards a sedentary lifestyle such as lack of physical activity and watching T.V might be the risk factors for overweight and obesity among children (Mozaffari & Nabaei, 2002).

Another cross-sectional national epidemiological household survey was conducted by El-Hazmi & Warsy (2002) in Saudi Arabia, to review the prevalence of overweight and obesity among Saudi children aged up to 18 years. The sample consisted of 12701 children (6281 boys and 6420 girls), with ages ranged from 1-18 years. Their height and weight were measured and body mass index (BMI) was calculated. The result revealed that the prevalence of overweight was 10.7% among boys and 12.7% among girls while the prevalence of obesity was 6.0% among boys and 6.74% among girls, particularly among males and females of the age group of 8-13 years. The prevalence of obesity increased again for those of 18 years old (El-Hazmi & Warsy, 2002).

In Palestine, one cross sectional study was conducted by Isbaih (2009) to estimate the prevalence of overweight and obesity among school children who were between (6-12) years old and to determine the factors associated with it. The sample consisted of 1744 students and 49.7% were males. 70% of the participants were from governmental schools while 15% were from private and 15% from UNRWA schools in Nablus city. The data was collected by self reported questionnaire that was filled in by the parents while the height, weight, waist circumference, hip circumference, and mid upper arm circumference for each student were measured by the researcher in the class . The findings showed that 7.9% of the males and 4.9% of the female were obese. The researcher indicated that mother's education, pocket money, number of carbonated beverages/week, way of transportation to school, length of daily playing outside the home, and parents obesity were significantly correlated with student's overweight and obesity (Isbaih, 2009). In addition, one school-based cross-sectional study was conducted by Jildeh et al (2002-2003) to assess the nutritional status of the Palestinian school-aged children in East Jerusalem. The data was collected by self reported questionnaire that was filled in through interviews. The sample consisted of 313 adolescents aged 11-16 years from public and private schools. The findings indicated that 24.3% were being overweight, 9.9% were obese and 23.3% were anemic. Only 22.4% of the students had physical activity for more than five days a week and the boys were more physically active than girls. The whole sample and especially boys consumed more total, saturated fat, less carbohydrate than what is advised. The researchers recommended that the school health education programs should target adolescents and parents should be involved in overweight-obesity and anemia prevention programs (Jildeh et al, 2010).

Finally, obesity has a significant impact on the psychological wellbeing of children and adolescents which may be expressed in eating disorders that arise out of perceived negative body image and low self-esteem (Swain,2006). Eating disorders (e.g., anorexia nervosa and bulimia nervosa) are psychological disorders characterized by severe disturbances in eating behavior. Anorexia nervosa is an eating disorder characterized by an intentional loss of a substantial amount of weight. The weight loss leads to drastic changes in appearance and body functions, and can be fatal. Bulimia is the second main type of eating disorder, which is defined as an eating disorder in which an individual engages in recurrent binging and

purging(Swain,2006). Adequate health information about these eating disorders may be important to prevent these occurrences, particularly among adolescents

2.3.7 Anemia and Iron Deficiency (ID):

Anemia is considered a global public health problem affecting both developing and developed countries with major consequences on the health and well beings and the social and economic development. It can be an indicator of both poor nutrition and poor health (Benoist & Mclean, 2008).

Anemia is defined by the World Health Organization as a hemoglobin concentration lower than the established cutoff which is 110 g/L for pregnant women and for 6 months–5 years old children, 120 g/L for non pregnant women and 130 g/L for men(WHO,et al, 2001). Anemia can be diagnosed by analyzing the hemoglobin concentration in blood or by measuring the proportion of red blood cells in whole blood (WHO, et al, 2001)

The most common cause of anemia is iron deficiency, which is an advanced stage of iron depletion and occurs when storage sites of iron (bone marrow, spleen, and liver) are depleted and blood levels of iron cannot meet daily needs (Semba & Ramakrisbnan , 2008). The iron deficiency anemia can be caused by heavy blood loss as a result of menstruation, or parasite infections such as hookworms, ascaris, and schistosomiasis, and acute and chronic infections, including malaria, cancer, tuberculosis, and HIV. The deficiencies of other micronutrient such as vitamins A and B12, folate, riboflavin, and copper can increase the risk of anemia (WHO, et al, 2001 ; Semba & Ramakrisbnan, 2008). These deficiencies have negative impact on growth, increase susceptibility to infection and also impair the mental and cognitive development and learning ability of school children (Soemantri, et al, 1985).

In the developing countries, low standards of living, low socio-economic conditions, restricted access to food and lack of knowledge about good dietary practices and personal hygiene contribute to a high occurrence of iron deficiency and hence anemia (Hassan et al,1997).

In Palestine, iron deficiency anemia can be considered as one of the most serious public health problems. For example, in 2005, the Palestinian Central Bureau of Statistics reported that 38% % children aged (6-59) months were anemic (PCBS, 2005). Another cross sectional study was conducted by Mahfouz (2009) to investigate the prevalence of iron deficiency anemia among primary school children in Qalqilia city. The sample included 178 students (87 male &91 females) aged between 6-12 years old in elementary school. The data was collected by self reported questionnaires filled in by the parents and blood samples were taken from the participants to assess the hemoglobin levels. The results indicating that 36% of students had iron deficiency, 31.5% had iron deficiency without anemia and 4.5% had iron deficiency with anemia. In relation to gender, the prevalence of iron deficiency anemia among females was 6.6% which was higher than males (2.3%) (Mahfouz, 2009).

Another cross sectional study was conducted by Odeh (2005) in the district of Salfeet in the north of Palestine to investigate the prevalence of iron deficiency anemia in school children aged 6 to 18 years. The sample consisted of 144 were male students (49,7%) and 146 were female students(50,3%). The data was collected through home visits and direct interview with the parents. Also, the blood samples were obtained from the participants and the blood tests were performed in the laboratory. The results showed that the prevalence of iron deficiency was 26.7% (12.7% with anemia, and 14% without anemia). Also, the prevalence of iron deficiency among females was 30.5%, and21.6% among males (Odeh, 2005).

Worldwide, one cross sectional study was conducted by Gari (2008) in Saudi Arabia to assess the prevalence of iron deficiency and iron deficiency anemia among female elementary school students. The sample consisted of 123 female students' aged between 6 to 12 years old from the governmental schools in the northern Jeddah. The data for the nutritional status was collected by phone interview with parents and blood samples were collected from the students and were analyzed to assess the iron deficiency. The results indicated that 25.2% of the participants had iron deficiency. And 10.6% of the girls had anemia, specifically 4.1% of the females aged between 6-9 years old. In addition it was found that 6.5% of the participants aged 10 -12 years old suffered from anemia. Furthermore, it was found that anemia was more

prevalent among students who did not eat meat, liver, green vegetables, fish, and who did not drink fresh juice (Gari, 2008).

Another cross sectional study was conducted by El Hioui et al (2008) in Morocco to determine the prevalence of anemia and factors associated with iron deficiency among school children in the Oulad Berjal and Kenitra region. The sample consisted of 295 students aged between 6 and 16 years old 41.7 % (n=123) were male and 58.2 % (n= 172) were younger than 11 years old). The socio demographic data such as the family income, the parent educational status, the number of family members and the working status of the parents were answered by the parents. In addition, blood samples were collected from the students and were analyzed in private laboratory of medical analysis. The results indicated that 12.2 % of the children had anemia and 20.4% had iron deficiency, and there was a significant relationship between education of the mother and anemia in children (El Hioui et al, 2008).

Still another study was conducted by Barduagni et al (2001) in Egypt to assess the prevalence of anemia among schoolchildren aged 6 to 11 years. The sample consisted of 1844 schoolchildren aged from 6 to 11 years, of whom 958 (52%) were boys and 886 (48%) were girls. 795 participants were from Armant district (424 male and 371 female), and 1044 children were from Deshna district (534 male and 515 female). Blood samples were taken from the participants and the hemoglobin levels were assessed directly in the schools using a portable hemoglobin spectrophotometer. The results revealed that the prevalence of anemia was 12.8% among boys and 11.2% among girls, In Armant district, out of 795 children, 96 (12.1%) were anemic and in Deshna district, out of 1044 children, 126 (12.1%) were anemic. Also , the prevalence of anemia was higher among the pupils in grade 1 (16.9%) and gradually decreased towards grade 5 (9.5%) (Barduagni et al, 2001).

Poor study or school achievement is one of the results of iron deficiency in school children (Halterman et al, 2001). Previous studies focused on this issue through measuring the intellectual and cognitive performance and most of these studies concentrated on test scores to study the effect of iron deficiency on cognitive performance among school-aged children. For example, a cross sectional study was conducted by Halterman et al (2001) to investigate the

relationship between iron deficiency and cognitive test scores among a nationally representative sample of school-aged children and adolescents in USA. The sample consisted of 5398 children aged 6 to 16 years old. The data was obtained from the National Health and Nutrition Examination Survey III, 1988-1994. The results revealed that 3% of the children had iron-deficient and the highest rate was among adolescent girls (8.7%). The average math scores were lower for children with iron deficiency (86.4%) compared with children with normal iron status (93.7%) (Halterman et al, 2001).

2. 3.8 Dental Caries:

Dental caries affect between 60-90% of children in developing countries and is the most prevalent oral disease among children in several Asian and Latin American countries. In Africa, the incidence of dental caries is expected to rise drastically in the near future due to increased sugar consumption and inadequate fluoride exposure (Petersen et al, 2005). In addition to causing pain and discomfort, poor oral health can affect children's ability to communicate and learn. More than 50 million school hours are lost annually because of oral health problems (Kwan et al, 2005). In both developed and developing countries, many children do not have access to water fluoridation or professional dental care. Daily tooth cleaning or brushing, reducing sugar consumption (Holden et al ,2000) and eating food containing calcium such as milk and green vegetables may prevent some dental disease (Jones et al, 2005; Wooldridge & Brown, 2008).

Some studies showed high prevalence of dental caries in school- aged children. For example, a cross sectional survey was conducted by Varenne et al (1999) to analyze the oral health status of children and adults in rural and urban areas of Burkina Faso in the Western of Africa. The sample covered four age groups: 6 years (n = 424), 12 years (n = 505), 18 years (n = 492) and 35–44 years (n = 493). The data was collected by oral examination of the participants' teeth. The results indicated that 38% of children aged 6 years old had caries, with prevalence higher in urban than rural areas. At the age of 12, 0.7% of the participants had dental caries with prevalence significantly higher among urban than rural children. Also, 1.9 % in 18-year-olds

groups and 6.3%, in 35–44- year olds groups had dental caries and figures were higher for women than men (Varenne et al, 2004).

Another epidemiological cross-sectional survey was carried out by Nuca et al (2007) in Romania to assess the caries prevalence and severity among 6- and 12-year-old children from an urban area. The sample consisted of children aged 6 years old (n=163) and 12 years old (n=259). The data was collected by clinical examination of students' teeth by one trained examiner at school. The results indicated that the caries prevalence was 88.3% for the six years old children and 77.2 % for the 12 years old children (Nuca, et al, 2009).

Moreover, a cross sectional study was done by Sabha (2007) in Palestine to determine dental caries prevalence among schoolchildren in the North of Palestine. The sample consisted of 357 children of the sixth grade classes aged 12 years old from six governorates which are Nablus (32%), Tulkarm (16.5%), Jenin (16.2%), Qabatia (16.5%), Qalqilia (10.8%) and Salfeet (8%). The data was collected by the intra oral examination on the teeth of the students and by the questionnaire. The results showed that 300 participants (84 %) had dental caries and only 16% of the children were caries free. However, the mean DMFT index (Decayed (D), Missing (M) and filled (F) Teeth) for this sample was 3.45 and this value is higher than the mean DMFT for 12 years old children that is accepted by the WHO which must be less or equal to 3 (Sabha ,2007).

2.3.9 Physical inactivity:

Early adolescence is a time of intense physical growth and development. Good food, water, and physical activity are necessary to oxygenate body and brain, increase heart and lung capacity, maintain vascular elasticity, and decrease fat storage. Physical activity reduces the risk of premature mortality in general, and of coronary heart disease, hypertension, colon cancer, and diabetes mellitus (CDC, 2001). Regular physical activity in childhood and adolescence improves the strength and endurance, helps to build healthy bones and muscles, control weight, reduces anxiety and stress, promotes good mental health, increases self-esteem, and establishes healthy lifestyles that may be continued into adulthood (CDC,2001).

Some studies showed that the physical inactivity is associated with overweight and obesity among youth (Souza et al, 2010). For example, a cross-sectional study was conducted by Souza et al (2010) to assess the association between physical inactivity and overweight of male and female adolescents in Salvador in Brazil. The sample consisted of 694 students aged 10 to 14 years old and 52.7% were girls and 51.2% were boys. The data was collected by self reported questionnaire which were filled in by the students to assess regular physical activity and measured body mass index (BMI) by using anthropometric measurements (weight and height). The result showed that the prevalence of obesity was 11.8%, 13.7% among girls and 9.8% among boys. The prevalence of physical inactivity was higher among girls (50%) than boys (28%) (Souza et al, 2010).

Also, according to the 2009 Youth Risk Behavior Surveillance (YRBS) survey in the USA, 81.6% of the students were not physically active for at least 60 minutes per day on all 7 days and only one-third of the respondents attended physical education classes daily (CDC, 2010b).

In Palestine, one cross-sectional survey was conducted by Al Sabbah et al (2007) to describe physical activity patterns among adolescents. The data was collected by questionnaires and the sample consisted of 8885 students (53% were from the West Bank and 47% from the Gaza Strip). 49% were boys and 51% were girls from grades 6, 8, 10 and their ages ranged between 12 and 18 years. The results indicated that 20% of the participants reported doing physical activity more than 5 days a week. For sedentary activities, 29% reported watching TV for more than four hours a day and 29% reported using a computer, while 18% reported doing homework more than four hours a day. Adolescents in West Bank were more active, watch more TV and use the computer more than adolescents in Gaza. Physical activity and television viewing were associated with the mother's education (Al Sabbah, et al, 2007).

In summary, this section provides evidence that school aged children and adolescents may face many health problems that may affect their academic achievement and their growth (physically, emotionally and cognitively). So schools may have crucial role in preventing these problems. The next section will discuss school health programs and its related components.

Section Three: The School Health Program (SHP):

Introduction:

Schools not only provide the critical outlets to reach millions of children and adolescents to enhance healthy behaviors, but also provide a suitable place for students to engage in these behaviors, such as eating healthy diets through school lunch content and participating in physical activity via physical education classes(CDC,2007) . The school years are considered as a formative time in the development of the human being by providing efficient means to improve children's health, self-esteem, life skills and behaviors (WHO, 1997) .

More recently, this was reinforced by the Centers for Disease Control and Prevention which stated that, "Schools are the only public institution that can reach nearly all youth; therefore schools are in a unique position to improve not only the educational status but also the health status of young people throughout the nation" (Gelfman & Schwab, 2005, p.16).

The School health services originated in Europe during the 19th century with the medical inspection of schools and children. The first country that mandate medical inspection was France in 1837 when it passed a royal ordinance requiring school authorities to supervise the health of school children and to ensure that schools were maintained in sanitary conditions. In 1874, other countries like Germany, England, Sweden, Russia, Hungary, Chile and Egypt soon implemented school and children medical inspections (Gelfman & Schwab, 2005) .

In Arab countries, the first country implemented SHP was Egypt, followed by Bahrain and Iraq in 1936, and Jordan in the 1960s. These school health programs provided only school health services like caring for cuts, bruises, and headaches (Badh,2004). The WHO has played

a key role in shaping the directions of school health, beginning in 1950 when it established an expert committee on school health services that produced a report calling for a more comprehensive approach to curriculum programs in health and pre-service training for teachers in the area of health (WHO, 1950, WHO, 1997). In the 1960s, WHO worked closely with UNESCO to develop one of the first international documents to serve as a guideline for schools to plan and implement school health initiatives (WHO, 1997).

During the late 1880s until the late 1990s, the school health program was shaped by three domains called classic triad or historical SHP (Torabi & Yang, 2000):

- Classroom health instruction (health education) : which was accomplished through a comprehensive health education curriculum focused on increasing student understanding of health principles and modifying health-related risk behaviors.
- School health services: which focused on the prevention and early identification and redemption of student health problems
- Healthy school environment: which was concerned with the physical and psychosocial setting and issues such as safety, nutrition, food services, and a positive learning atmosphere

As the complexity of students' health concerns and problems increased, Allensworth and Kolbe (1987) added other five components to the historical SHP and called it coordinated school health program.

This section discusses the following issues:

- The component of coordinated SHP
- The Palestinian school health program
- The goals and the importance of SHP.
- Studies that assess the SHP.

2.4 The components of coordinated school health program:

The coordinated school health program (CSHP) encourages all schools to address their students' health on various levels. Its mission is to promote wellness**,** motivate health improvement, and offer educational opportunities for students, families, and community members, so schools have the ability to improve both education and the health of students and school personnel by implementing the planned, ongoing services of the comprehensive school health program (Allensworth, et al, 1997).

This program is intended to take advantage of the basic position of the school by making the school as the location of setting the integrated programs and services to enhance the education, health, and welfare of children and their families. These programs may not only improve the health and the educational outcomes for students, but also reduce overall health care costs by emphasizing prevention and early identification of health problems and by providing easy access to care (Allensworth,et al, 1997). Moreover, the general goal of this program is to establish a system including home, school, and community support to assure that the students are provided with a planned sequential program of study, appropriate services, and a nurturing environment that promotes the development of healthy, well-educated and productive citizens (Kolbe,2002).

The modified coordinated school program consists of eight components in which they are coordinated together to develop and to reinforce health-related knowledge, skills, attitudes, and behaviors and to assure that health is a priority at schools (CDC, 2011).

The eight essential components of school health programs are : (Allensworth, et al, 1997, McKenzie & Kotecki, 2008) .

1. **Health education**, which is an age-appropriate curriculum and instruction that is designed to address all aspects of health, including the physical, mental, emotional, and social dimensions. Also, it is designed to increase students' health knowledge and improve their health-related skills and behaviors that they need to avoid or modify behaviors related to the leading causes of mortality, morbidity and injury during youth and adulthood.
2. **The physical education,** which helps students to increase concentration, reduce disruptive behaviors, and improve scores in mathematics, reading, and writing. Beyond the academic

benefits, physical activity and physical education contribute to the maintenance of positive interpersonal relationships and reduce the incidence of depression, anxiety, and fatigue.

3. **School health**, which provides preventative services including immunizations, visual, dental & hearing screening and growth monitoring and development. In addition to the provision of optimum sanitary conditions for a safe school facility and school environment. These services have a major impact on the students' health and their abilities to succeed in school. This impact is reflected in better attendance, decreased dropouts and suspensions, and higher graduation rates.
4. **The family and community involvement**, the integrated school, parent, and other community groups will build support for school health program efforts and enable the schools to respond more effectively to the health-related needs of students .
5. **Counseling, psychological and social services**: These services provide appropriate assistance for students and their families. Effective programs focus on prevention, address problems, facilitate positive learning and healthy behavior, and enhance student development.
6. **The nutrition services** which involve an effective program integrating an appealing meal program with nutrition education and a food environment that promotes healthy eating. School nutrition focuses on lifelong benefits. Because hunger not only impacts health but also affects students' academic achievement.
7. **A healthy school environment** which addresses both the physical and psychosocial climate of the school. The physical environment includes the school building, area surrounding it, adequate water supply and sanitation, physical conditions such as healthy air quality, good lighting, safe playgrounds, and emergency evacuation. The psychological environment include the physical, emotional, and social conditions that affect the well being of students like bullying, teasing , absence of positive regard and lack of recognition by teachers. Three priority areas for action have been identified: building a sense of security and trust, enhancing skills and opportunities for communication and social connectedness, and building a sense of positive regard through valued participation in schools. Students perform better in facilities that are attractive, functional, safe, and secure. The social and emotional climates of the school are equally critical to students' academic success.

8. **Health promotion for staff**, which provides opportunities for school staff to improve their health status through activities like health assessments, health education, and health-related fitness activities. It encourages staff to practice healthy behaviors at school, and improve their personal health. This type of reinforcement is critical to sustain healthy behaviors of both teachers and students. Many school health promotion programs focus on promoting physical activity of staff which plays a critical role in stress reduction, maintenance of weight, fewer sick days and lower health insurance cost due to illness. In addition, students benefit from having healthy teachers because their teachers are more energetic and absent less often. Moreover, healthy adults in the school contribute to a positive and more optimistic environment

2.5 The School Health Program in Palestine:

The long lasting political conflict of Palestine has affected all aspects of life. It becomes more challenging to provide solutions to address various social issues that include health in the midst of these political obstacles, so it is important to provide solutions for future generations. Schools in Palestine face financial crises, but even with these harsh realities, the Palestinian Ministry of Health and the Palestinian Ministry of Education and Higher Education have partnered together to introduce school-based health programs in 1994 after the existence of the Palestinian authority. According to Dr. Walid al-Khatib (Interview, 2009), the Director of School Health Programs at the Ministry of Health, the program was established when a meeting was held in 1994 after the establishment of the Palestinian Authority, to devise a policy related to health programs at Palestinian Schools. The representatives were from the Ministry of Health, the Ministry of Education, various non-governmental organizations, and the UNRWA in Palestine. Following this meeting they decided the policy of school health program was the policy components they decided upon to become the policy for the Health School Program in Palestine.

The success of school health programs requires an effective partnership between the Ministry of Education and the Ministry of Health, between teachers and health care professionals. The Ministry of Health has the responsibility for the health of children but the educational sector is responsible for ensuring a healthy environment for the learning process. Both ministries

identify the various responsibilities and based n these needs, they develop a coordinated plan of action to improve the health-related and learning outcomes of children. These school health programs also require teachers and other school personnel to be trained and supported in their new roles as health promoters(Ministry of Health,2010).

The school health program that related to the Palestinian Ministry of Health depends on the F.R.E.S.H. Approach(Focusing Resources on Effective School Health) which is developed by UNESCO, UNICEF, WHO, the World Bank and Education International, with a joint set of recommendations for the implementation of effective school-based health (Ministry of Health, 2010). The F.R.E.S.H. Approach consists of four basic components (which at times overlap, as detailed in the Technical Guide for School Health Services published in 2010 by the Ministry of Health):

- **School health policies**: these policies are intended to protect and serve the students, staff and other members of the local school community and aims at creating a healthy physical and psychosocial environment for all students and staff, and to make the school a model of best practice for the whole community. The specific issues that may need to be addressed in school policies include: rights, discrimination and gender issues, environmental concerns such as water and sanitation concern, food service conditions, the safety of school buildings and grounds, school feeding programmes, violence prevention efforts, health education programmes, health services such as, immunization, health screening, keeping health records, prevention of communicable disease, and emergency health procedures (Dass,2004).
- **Water, sanitation and school health environment**: having a provision of safe water and appropriate sanitation facilities are some of the basic steps in creating a healthy physical environment for effective learning. Healthy and hygienic schools may serve as an example to both students and the wider community(Dass,2004). .
- **Skills-based health education:** health promotion and the prevention of important health problems are the core of skills-based health education. The quality of these skills will help students to acquire skills other than health-related knowledge, but also to be able to effectively communicate, solve problems, and make informed and independent decisions. Also, these skills contribute in the development of attitudes

and values that promote respect for one's self and for others, and becoming more tolerant of differences. Overall, this would result in the adoption of health-promoting habits and reduces risk-taking behavior that associated with morbidity and mortality. As a result, young people who receive high quality skills-based health education are more likely to adopt and sustain a healthy lifestyle not only during their school years, but throughout their lives(Dass,2004).

- **School-based health services**: effective school health programs and services link health resources, education, nutritional knowledge and sanitation at schools together. This would benefit the educational process, due to the fact that a healthy environment minimizes absences. As students become healthier, they tend to participate more in educational opportunities(Dass,2004).

These components can be implemented properly by supporting activities which include:

- Effective partnerships between teachers and health workers and between the education and health sectors:
- Community partnerships: the involvement of the broader community (the private sector, community organizations and women's groups) enhances and reinforces the school's health promotion activities, and brings additional human and material resources to the effort.
- Pupil awareness and participation: students are not simply the beneficiaries of school health activities, but also important participants. As the ones who are involved in health development by involving in healthy activities, and making efforts to create a safer and more sanitary environment, will acquire the knowledge, attitudes, values and skills needed to adopt health-promoting lifestyles.

The Palestinian Ministry of Health has the responsibility of providing health services for children at schools. They provide the following:

1. Health Services that include:

    - Screening tests: these tests include hygiene-related diseases, nutrition-related diseases, vision-related diseases, and congenital-related disease. The target groups for these tests are Kindergarteners, 1st graders (boys and girls), 5th

graders (boys and girls), and 8th graders (boys and girls) , and 6th graders (only girls). These tests are conducted at all governmental and private schools

- The immunization: the required immunizations at schools are Oral Polio Vaccine (O.P.V) and Diphtheria and Tetanus Toxoids Vaccine (D.T) for boys and girls of the 1st grade, (Rubella) for the 6th female grade students and (D.T) for boys and girls of the 9th grade.
- Control and monitoring the communicable diseases such as the chicken pox, Measles, Rubella, Hepatitis A, Mumps and Meningococcal meningitis.
- The first aids training for various school personnel(Ministry of Health,2010). .

2. Monitoring school environment. These include the supervision of the schools' hygienic facilities (i.e., toilets, the inspection of the quality of the drinking water, the supervision on the cleanliness of the canteen, inspection of the quality of the offered food , the methods of waste disposal, and having a first aid kit safety).
3. Supervise and promote the entire and well-being of students, teachers and parents (Ministry of Health,2010). .

The school health team that consists of seven professionals is responsible for these services. The team included a medical doctor, a nurse, an environment inspector, a health promoter, a health worker, a dentist and social worker. In addition to providing these services, they document their work and collect data. When they come across a health problem, they transfer the case to the local hospital and inform the parents(Ministry of Health,2010).

The school health program that related to the Palestinian Ministry of Education and Higher Education was established under the Palestine Education Service, which is a division of the Palestinian Ministry of Education, in 1994, starting as a small unit. In 2005, it became a separate department called General Directorate for School Health and it has general management to follow up its activity (Palestinian Ministry of Education and Higher Education, 2008 a).

It consists of the school health committee which is the fundamental group to improve the health situation at schools. This committee plays very important role in addressing issues of

concern such as monitoring the health situation of students, facilitating health services, caring for the school environment and overseeing the implementation of healthy activities, projects and health programs. All the Palestinian schools must have a school health committee, according to the instructions of the Palestinian Higher Ministry of Education. The committee consists of a group of students, teachers and parents who are chosen according to specific standards in order to make a plan for the school with the aim of improving the health situation at school. It consists of three teachers (health coordinator, scout responsible, and teacher), the supervisor, two participants from local community and a group of students (10-16). The students are chosen through cooperation between the health coordinator and the responsible teacher of the class according to special arrangements(Palestine, Ministry of Education and Higher Education, 2008b).

The school health program that related to the Palestinian Ministry of Education consists of four components :

1. **School health services:** These include the yearly physical check-up, oral health check-up, review of immunization cards, preventive interventions and referral for treatment and vaccination and in coordination with the Palestinian Ministry of Health and non governmental organizations (NGOs). These services are introduced by two teams. The first team is responsible about the early screening of diseases and disability among students and must include a doctor or a physician. The second team is responsible about the vaccination of the students (Ministry of Education and Higher Education, 2008b**).** They provide comprehensive screening for the 1st grade and dental examination and eyesight test for 7th and 10th grades (Palestine, Ministry of Education and Higher Education,2008b).

   The main roles of the health committee are to prepare students' health cards, filled out by the responsible teacher for each class, prepare the students for screening or vaccination, measure the height and weight of students, communicate with the parents about the results of the screenings, and document all the emergency or disease cases that happened at the schools. The required immunizations at schools are Oral Polio Vaccine (O.P.V) and Diphtheria and Tetanus Toxoids Vaccine (D.T) for boys and girls of the 1st grade, (Rubella) for the 6th female grade students and (D.T) for boys and girls of the 9th grade.

The Palestinian Ministry of Education and in cooperation with the Palestinian Ministry of Health emphasizes the importance of these vaccinations which should be taken by all the target students. The role of the health committee is to document the vaccination in the health cards of the students and with the assistance of the responsible teachers who communicate to the parents about the procedures and the types of the vaccinations being administered to their children. In addition, this committee plays an essential role in forming the school health department about any suspicion of infection or any communicable diseases among students and promoting a healthy school environment to enhance the sanitation of the school facilities and decreasing the prevalence of infectious diseases among students.

2. **Health education and promotion**: Schools have the responsibility to educate and foster their students' healthy and hygienic behaviors. It is necessary to warn the students about various health risks, and teach them how to protect themselves and others against diseases and other forms of illness by adopting healthy and hygiene promoting habits and practices.

   Health education and promotion plays an essential part in primary health care and is designed to give opportunities for school students to maintain and improve their health status through knowledge of first aid, safety on roads, personal and public hygiene, dissemination of the awareness publications about risky behaviors and their effect on health (e.g. smoking, AIDS and violence), announce through the school radio health information such as nutrition, smoking ,drug use and initiate healthy occasional days such as cleaning, smoking and environment days (Palestine, Ministry of Education and Higher Education **,** 2008 b) .

   The most important policies for health promotion adopted by the Ministry of Education and Higher Education are decreasing violence in schools (it was adapted only in Jerusalem schools), nutrition policy, supervising food items being sold at canteens, and the healthy elements of a school environment. Health promotion and education can be interconnected with all components of school health programs (Palestine, Ministry of Education and Higher Education, 2008 b)

For example, in order to enhance the personal hygiene and sanitation practices of students, each of the responsible class teachers identify a day for hygiene inspections of students such as the hygiene of nails, hair, face and clothes. Inspected cases are isolated to ensure privacy. They also facilitate cooperation among the educational staff for the inspection day, communicate with the community and parents to encourage healthy behaviors and hygienic practices among their children. Hygienic practice can be promoted through activities such as the school radio, dissemination of awareness publications at school, posting bulletin boards with environment and hygienic awareness materials, involving the students in voluntary activities at school like cleaning and environment day, organizing competitions to improve healthy positive behaviors, and broadcasting the importance of hygienic practices in preventing diseases through the school radio(Palestine, Ministry of Education and Higher Education,2008 b).

3. **School environment:** its aim is to reduce the risk of injury and disease among students which may be caused by environmental factors and it plays an essential role in the retention and the learning outcomes of the students. The school environment involves the physical surroundings and the psychosocial climate and culture of the school. Factors that influence the physical environment include buildings which are comfortable, ventilated and adequately lit, safe clean drinking water with regular water quality monitoring , gender and culturally appropriate sanitation/toilet facilities (Palestine, Ministry of Education and Higher Education ,2008 b ; WHO,1950).

   In general, the hygiene and sanitation of schools and their facilities such as toilets, classrooms and playgrounds are very important factors in decreasing the threat of the spread of illnesses like respiratory infections, asthma attacks, skin diseases, and diarrhea outbreaks. In addition it transmits a caring message to students and teachers. Students feel better going to clean classes and sitting in clean desks and surroundings. Other environmental factors include appropriate disposal of waste, adequately spacious class rooms, comfortable seating arrangements, access for disabled and physically challenged people, play space and playground protection such as trees and covered areas (WHO, 1950).

If the physical environment is appropriate for children, it makes both them and the teachers more comfortable, leading to easier learning, and reducing the risk of injury and disease (Berry, 2002). The psychological environment includes the physical, emotional and social conditions that affect the well being of students and staff (McKenzie, et al,2008). A positive school psychological environment exists when all students feel comfortable, wanted, valued and accepted with caring people they trust and when they are in a secure environment. In addition, a positive school climate affects everyone associated with the school; students, staff, parents and the community (Berry, 2002).

The school environment consists of:

- The classrooms: the characteristics of the classrooms that ensure the safety of the students include adequate space, ventilation, adequate light and furniture. For instance, ensuring the availability of adequate ventilation and lights through clean windows, comfortable seats that fit the size of the students, and a black or dark green board located in the middle of the wall in front of the students and in appropriate height. The role of the health committee in promoting a healthy environment can be achieved by monitoring the hygiene of the classrooms, monitoring the proper lighting and ventilation and ensuring the public safety such as electricity, doors, windows, chairs and desks (Palestine, Ministry of Education and Higher Education,(n.d)).

- The hygiene facilities which include toilets (location, space, water, hygiene and cleanliness) and playgrounds. The location of the toilets should be far away from the classrooms and located in the east southern part of the playground. There should be at least one toilet for every 30 students and one for every 20 teachers. It is preferred to have separate toilets for boys and girls. In addition the toilets should be provided with water, toilet paper and soap and appropriate sinks outside the toilets. The health committee consisting of the school principle and the health coordinator monitor and supervise the hygiene of the toilet facilities twice a day which is the responsibility of the school keeper and not the students. In addition, the playground or the school yard should be spacious to enable the students to play freely and to avoid injuries. The playground should be provided with covered areas and trees to protect students from

the sun light or rain. The health committee is responsible for supervising of the hygiene of the school yard and the garden(Palestine, Ministry of Education and Higher Education,(n.d)).

4. **School nutrition**: its aim is to increase nutritional awareness among students, encourage healthy eating patterns to prevent immediate health problems such as iron deficiency anemia, obesity, eating disorders, and dental cavities. It may also prevent long-term health problems, such as coronary heart disease, cancer, and stroke (Allensworth,et al, 1997). School health programs can help children and adolescents to attain full educational potential and good health by providing them with the skills, social support, and environmental reinforcement they need to adopt long-term, healthy eating behaviors. The school nutrition program includes the following aspects: nutritional awareness and encouragement to eat breakfast meals, providing healthy food and fresh juices in school canteens, providing free meals to some schools in the city, and evaluation of the nutrition situation at school**.** The role of the health committee is to enhance healthy behaviors among students, broadcast nutrition issues over the school radio, encourage the service of breakfast at schools, monitoring and supervising the quality of the sold food items at the canteens and follow up on the implementation of nutrition projects at schools (Palestine, Ministry of Education and Higher Education, 2008 b).

   The school health program could not be fully implemented without having staff and parents' cooperation and involvement. For example, the school principles play an essential role in the school health program by supervising all activities of the health committee, managing and participating in health meetings, and coordinating with the health organizations to implement many activities related to health. In addition, they monitor the health situation and health behaviors of the students, enhancing the communication channels among the school administration and the parents to improve the health of the students **(**Palestine, Ministry of Education and Higher Education, 2008 b)

   Also, the teachers play very essential roles in promoting the health of their students because they spend more than six to eight hours a day with students, enabling them to notice and observe the normal and abnormal behaviors and conditions among students. In

addition the teachers serve as role models for their students if they adopt healthy behaviors (Palestine, Ministry of Education and Higher Education ,2008 b).

2.6 The Goals and the importance of School Health Programs

This program has many aims which include: (Kolbe,L,2002; CDC,2011)

- Increase health knowledge, attitudes and skills, in order to help students to increase their health knowledge such as how to read product labels and to make healthy eating choices. Also, it helps them to develop life related skills such as communication and interpersonal skills, in addition to copying and self management skills such as refusing alcohol or tobacco(smoking).
- Increase positive health behaviors and health outcomes. The school health program is designed to help adolescents and school aged children to avoid the risky behaviors which contribute to the leading causes of injury, illness, and death. Also, it can create safer schools and positive social environments that contribute to improve the health of students.
- Improve education outcomes. Healthy students are more likely to learn than those who are unhealthy. Implementing school health programs will appraise, protect and improve the health of students, thus reducing absenteeism and increasing their academic achievement.
- Improve social outcomes. The school health programs provide the opportunities to build positive social interactions and foster the development of students' respect, tolerance and self-discipline.

The importance of the SHP appears from the reality that schools are vital in promoting the health of school aged children and adolescents. In societies where a significant number of parents with high rates of illiteracy, provide limited information about health and healthcare to their children ; schools provide the infrastructure and personnel, to disseminate health information and address the health needs of children and adolescents (World Bank ,1993).
Also, previous research has noted that healthy children perform better and have better school attendance rates. In addition, children who acquire health related knowledge and skills at

school are less likely to engage in risk behavior as adolescents, and are more likely to carry the skills and knowledge into adulthood (Del Rosso and Marek , 1996).

Furthermore, teachers have a great impact on their student's health and serve as a role model for the children. It is difficult to persuade youth to quit harmful behaviors if they see their teachers engage in them (Pollock et al, 1994). Children often pass on health-related knowledge and skills acquired from schools to parents and other members of the household. As a result, school-based health programs benefit not only students but their family members and their community at large (WHO, 1999; CDC,2010 a).

The SHP enhances the physical, psychological, and social well-being of the students and gives them the ability to take full advantage of every opportunity for education. It also improves the morale and the ability of school staff to carry out their mission more effectively and improve their own health. At schools and health systems, the efficient use of the scarce resources can be maximized and the waste declined. Moreover, the school health program can impact the nation through healthier and better educated individuals providing a stronger basement for economic development (Allensworth et al, 1997; CDC,2010 a).

In general, schools alone cannot assume the responsibility for combating health and social problems without the support and participation of the families and the community (i.e. health professionals, media, religious institutions and local governments). They can provide an important setting through which these organizations and individuals can work together for the promotion of health and the well being of community members (Allensworth, et al, 1997).

2.7 Studies that assess the school health program (SHP):

Some studies were conducted to assess the different components of SHP. For example, a cross sectional study was conducted by Badh (2004) to assess the quality of services that were provided by health program at Zarqa Governorate Schools in Jordan . The sample consisted of (316) schools principals for the academic year (2003/2004). The data was collected by using self reported questionnaire which consisted of 40 items and covered the following components of school health programs: school health services, school health education and school health environment. The results revealed that 94% of the principals indicated that each student have had health cards at school, 90% reported that students received vaccinations, 84% stated that

the students personal hygiene were inspected at school, more than the half of the respondents (68% and 66% respectively) showed that the students' dental examination and eyesight tests were conducted at school. For the health education component, 83% of the participants stated that there was a health committee at school and 70% of the respondents indicated that the health committee followed up the hygienic and cleanliness of the school facilities. Moreover, 66% of the principals indicated that bulletin boards were posted at schools and 65% of them stated that the health information were broadcasted over school radio, nearly the same percentage (64%) reported that competitions are organized and 62% of the participants indicated that their school increase the health awareness among students. For school health environment, the school principals reported that there were rubbish bins in the school yards and classes (94% and 93% respectively) ,82% of them stated that the presence of a fence around the school yards,74% reported the availability of appropriate lights in classes, 72% indicated existence of follow up and supervision of the hygienic status of school canteens. For the comfort of students' seats 70% of school principals reported that they were available and the same percentage stated that drinking water was accessible at school. Also, 64% of the participants indicated that the classrooms got enough ventilation, 56% of them reported that the school toilets are provided with water, while 55% of the principals stated the availability of sinks at their schools and only 8% of them reported that the school had a clinic. Moreover, the researcher concluded that the level of implementing school health services program in the schools of Zarqa Governorate is medium. This study recommended an increase in training the medical and the associated medical staff by the supervisors of the school health services, increase the number of teachers and officials in school health services, and advises the directors of the educational directorates to be more interested in accomplishing the environmental reforms required by the staff of school health programs (Badh, 2004).

There is a lack of studies that assess the school health program (SHP) in Palestine with its four components which are school health service, health education and promotion, school environment and school nutrition. A cross sectional study was conducted by Tokan (2003) in Palestine in order to investigate the status of school health programs at the governmental and UNRWA basic schools in Nablus District. The sample consisted of 433 teachers in Nablus governorate for the academic year (2002/2003). The data was collected by using self reported questionnaire consisting of 72 items related to environmental health, physical health,

psychological health and social health. However, it did not assess school nutrition,school environment and health education and promotion components. The results showed that 68.6% of the teachers stated that there is no environmental pollution around their schools, and 63.6% of them reported the school yard is spacious. Moreover, 59.4% of the participants indicated that the space of the classrooms is compatible with the number of students, 80% of the teachers stated that the drinking water is always accessible and 75.6% of them claimed that the school toilets were clean. In addition, 75.6% of the respondents stated that the hygiene of the canteen and the quality of offered food by it was always inspected and nearly the same percentage (75.8%) reported that the food items being sold at school canteen are kept in clean environment. Finally, 54.8 % reported that there is healthy food for students . For the second component which is the physical health, 76.2% of the teachers reported that every students hold a health card, 65% of them stated that the eyesight test was conducted for students and the same percentage (65 %) indicated that competitions to promote healthy behaviors among students were organized at their schools and more than the half of the teachers (65.8%) reported the need of a nurse or a doctor at their schools. For the psychological health component, 78% of them stated that they help the students to react well in the school environments, 52% reported that they followed up the psychological issues related to certain students, while 74% of the participants indicated that they cooperated and helped students to improve their educational skills. Finally, the majority of the teachers (80%) stated that they supervised the students to communicate with each others and encourage them to participate in the social activities . Also, the results found that no significance relation between teachers' sex and their responses to the status of school health programs in its four aspects. This study recommended improving the environmental health in UNRWA schools, improving the school health program in villages, conducting other studies on school health programs in other districts and reconstructing schools that were destroyed by Israeli aggression (Tokan, 2003).

Another study was conducted by the Palestinian Ministry of Education and Higher Education (2008a) in order to evaluate the SHP in 100 governmental schools in Palestine. The sample consisted of students from one class only and their parents, school principal, the school health coordinator, social supervisor, school teachers and three disabled students in the same school. The study didn't mention the name of the schools, their location, and number of

students and teachers who participated in this study. The data was collected by self reported questionnaire which consisted of 12 questions related to the four components of SHP. The results showed that the majority of the students (90.1%) reported that their schools concerned about the follow up and supervision of the hygienic and cleanliness of their classes while 85.6% of them stated that there is always awareness toward the school hygiene facilities. In addition, 87.6% of the respondents indicated that they were aware of their personal hygiene, 80% stated that the school followed up the students vaccination while 78.5% of the participants indicated that their schools promoted healthy and positive behaviors among students inside and outside school. However, more than the half of the participants (54.5%) reported that healthy nutrients like meals, milk and biscuits were not provided at their schools while less than the half of the students (35.7%) stated that these meals are provided. Also, more than the half of the respondents (60.1%) stated that healthy meals and drinks were provided at the school canteen versus 30.5% of them reported that as not provided. In addition, more than the half of participants (58.9%) indicated that there was a supervision on the expiry dates for the offered food items sold at the canteen and only 18.1% of them reported that as there was no supervision. Regarding voluntary activities for enhancing healthy behavior, high percentage of students (73.1%) stated that they involved in such activities while only 18.1% reported that they did not do that. Also, 96.3 % of the teachers claimed that they were concerned about the follow up and the supervision of the hygienic and cleanliness of the classrooms and the same percentage of them stated that there was always awareness toward the school hygiene facilities. In addition, 97.6% of the respondents indicated that they increased the students' awareness about their personal hygiene, 85% stated that the school followed up the students vaccination while 96.2 % indicated that their schools promoted healthy and positive behaviors among students inside and outside school. Furthermore, more than the half of the participants (60.9 %) reported that healthy nutrients like meals, milk and biscuits were provided at their schools while less than one fourth of them (29.8 %) stated that these meals were not provided. Also, the majority of the respondents (88.2 %) stated that healthy meals and drinks were provided at the school canteen versus 4.3 % of them reported that as not provided. In addition, 88.2% of the teachers indicated there was supervision on the expiry dates for the offered food items sold at the canteen and only 4.3 % of them reported that as there was no supervision. Regarding voluntary activities for enhancing healthy

behavior, high percentage of the teachers (87%) stated that students involved in such activities while only 9.9 % reported that they did not do that (Palestinian Ministry of Education and High Education, 2008 a). Despite the importance of this study, it has many weakness. For example, the methodology is not clear (e.g. total number of students or the participants) and it seems that the sample of the students was very small as only one class was involved. Also, the demographic characteristics of the participants were not clear and the study focused more on professionals such as principals, teachers and school health coordinators than students. Moreover, as the findings of the study were very positive , there is a need for external assessment of the implementation of the 4 components of SHP.

In summary, the previous studies had indicated the importance of the SHP and according to the diverse components of this program, but there is a lack of studies that assess the four components of SHP according to the students' and teachers' perspectives.

Summary:

- While there are several models of SHP worldwide, no single model is best. Each community designs the SHP according to its ' needs, resources, perspectives and standards.
- The SHP in Palestine was established in 1994 after the presence of the Palestinian Authority and in a coordination between the Palestinian Ministry of Education and the Palestinian Ministry of Health.
- The SHP consists of four components which are health services, health education and promotion, school nutrition and school environment. .
- There is a lack of such studies in Palestine that assess the four components of SHP.

Chapter Three

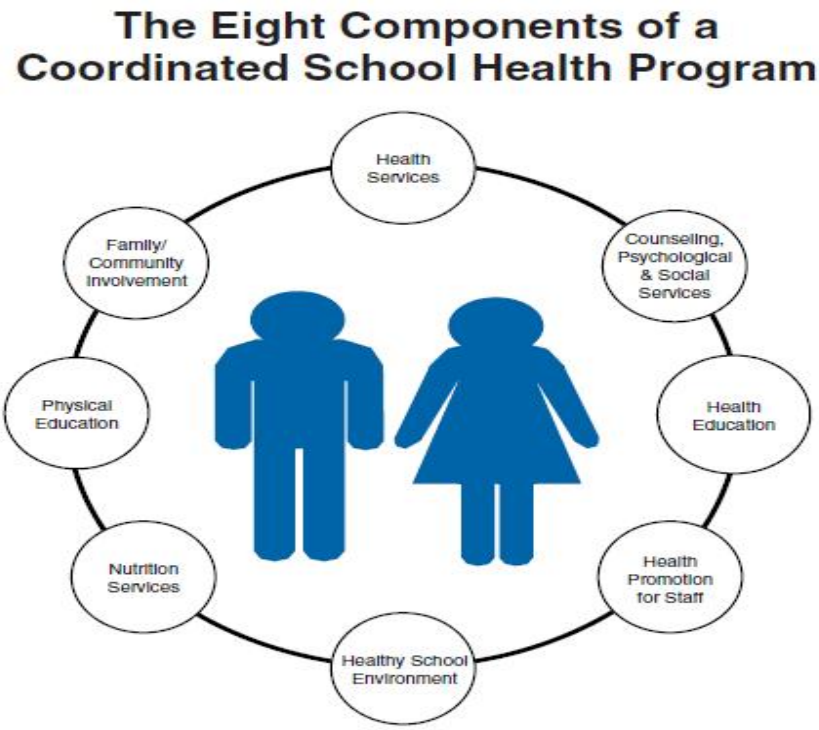
Conceptual framework

Chapter three
Conceptual framework

Introduction

The school health program can be considered as an effective way in preventing or reducing the health risk behaviors and the needs among the students (Allensworth and Kolbe, 1987).So many countries in the world start developing school health program (SHP) with different components such as nutrition, health services, environment, health promotion, etc. Then this program was modified by CDC and recommended as Coordinated school health program (CSHP) for improving students' health and learning(CDC,2011) . The CSHP is an organized set of policies, procedures and activities that designed to promote the optimal physical, emotional, social, and educational development of students (McKenzie, et al,2008).

As discussed in chapter two, the CDC conceptual framework of CSHP suggests that this program consists of eight interactive components (McKenzie ,et al ,2008 ; Allenworth, et al,1997). These components coordinated together to develop and to reinforce health-related knowledge, skills, attitudes, and behaviors and to assure that health is a priority at schools (CDC, 2011). As shown in figure (3.1) . The conceptual framework of the current study is based on this model.



Adopted from CDC: Healthy Youth: Investing in Our Nation's Future,2003

Figure (3.1): conceptual framework for CSHP.

3.1 The conceptual framework of this study

Taking into consideration the nature of the Palestinian SHP which consists of four components (health education and promotion, the school nutrition, the school health services and school environment), the conceptual framework of the current study includes these four components in addition to the independent variables such as gender, participants' school as shown in figure (3.2).

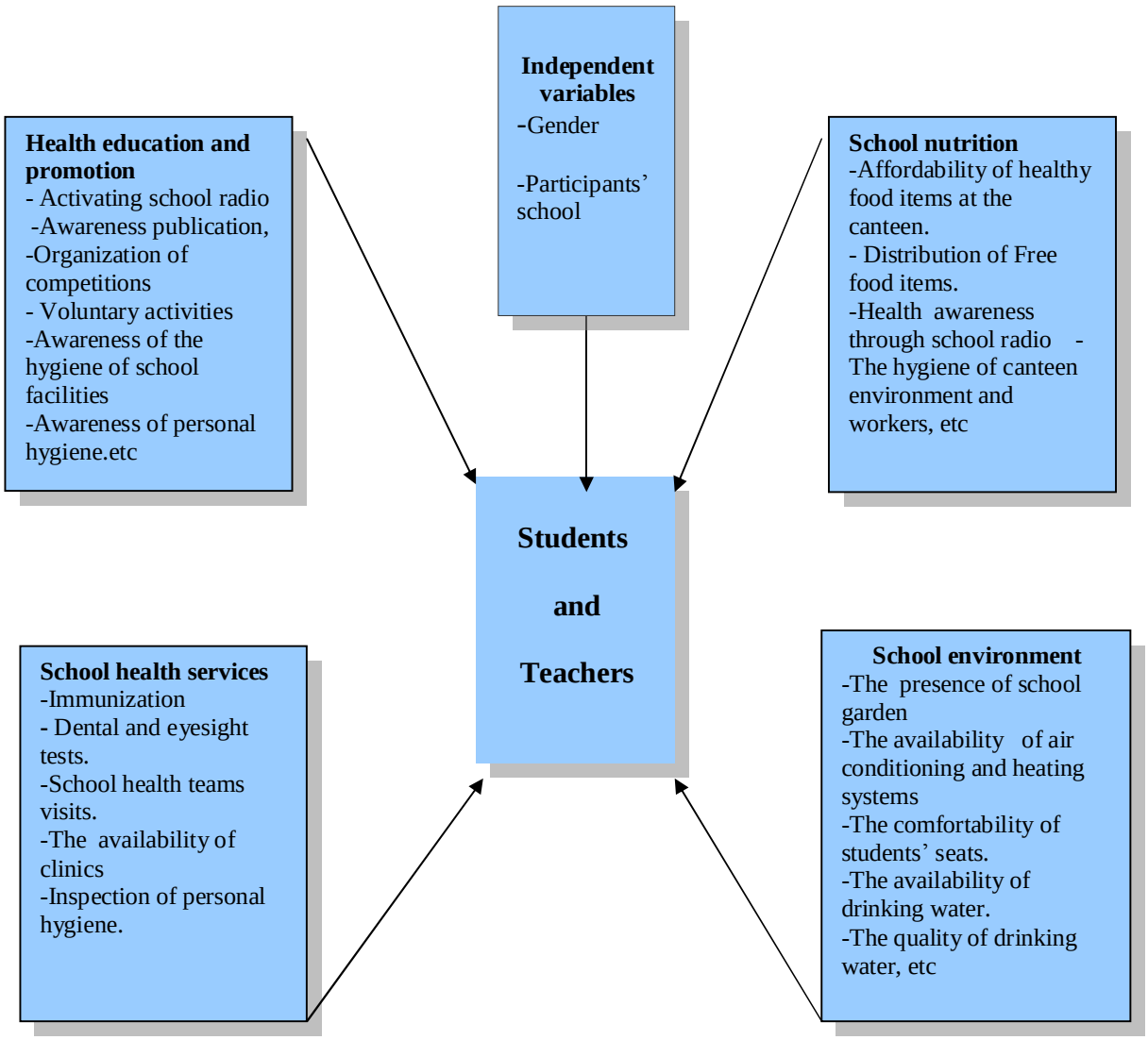


Figure (3.2): The conceptual framework of the study

Summary:

- The CSHP consists of eight components which are health education, physical education, school health services ,staff promotion, healthy school environment, Counseling, psychological and social services, nutrition services and counseling, psychological and social services .
- The SHP belongs to the Palestinian Ministry of Education and Higher Education consists of four components which are health education and promotion, school nutrition, school health services and school environment .
- The conceptual framework of the current study is derived from the CDC conceptual framework for CSHP.

Chapter Four

Methodology

Chapter 4
Methodology

Introduction:

This study aims to assess the SHP at the governmental schools in Hebron city according to the teachers' and students' perspectives. To address this aim, a quantitative approach has been used. Also, a proper research instrument, data collection, data processing and analysis have been followed. This chapter discusses all these issues and other methodological aspects in more details.

4.1 The Research design of the current study:

As discussed previously, the main aim of this study is to assess the implementation of SHP at the governmental schools in Hebron city according to the students' and teachers' perspectives. Therefore, a cross-sectional study was adopted and utilized, due to the fact that cross-sectional studies are highly useful for descriptive purposes (Grove& Burns, 2005). It measures both the prevalence of outcomes and determinants in a population at a point in time or over a short period of time (Monsen & Horn, 2008) .Also, this design was utilized because it is helpful in yielding an overview of the implementation of SHP at schools and can show the relationship between different variables (Altman , 1991). Moreover, it is relatively quick, cheap and easy to undertake (Monsen & Horn, 2008).

4.2 Study population and sample size:

This study targets students of the 10^{th} grade and the teachers. The students of the 10^{th} grade were selected because they had spent enough years in school and it is assumed that they are more capable to judge the implementation of School Health Program (SHP) services in their schools than younger students. All teachers who teach at the schools which were selected in the study were also included.

There are 45 governmental schools that have the 10th grade level in Hebron city with (4591) students and (1134) teachers (Directorate of Education/ Hebron, 2009). So due to the large number of students and teachers, 10 % of the total schools (which are accounted 5 schools) was selected randomly from a list of 45 governmental schools that was taken from the Directorate of Education of Hebron. The five schools were selected randomly; three of these schools were for girls (n=286) which had 70 teachers and the other two schools were for boys (n =143) which had 44 teachers (see table (4.1)).

Table (4. 1) The names of the included governmental schools and the numbers of the students and teachers in Hebron city:

No	Names of schools	No. of teachers	No. of students in 10th grade /school
1	Al-Sayeda Sara	30	143
2	Gernata B	17	44
3	Ibrahim Abu Daba'at	23	99
4	Mesbah Abu Hanak	30	127
5	Yosry Al-Natsheh	14	16
Total		**114**	**429**

Source: Personal Interview and data collection from with Directorate of Education/ Hebron, October 2009.

The inclusion criteria of the study were:

- All 10th grade students who are attending the five selected schools.
- All the teachers who are teaching in the five selected schools.

The exclusion criteria were:

- All students who are not in the 10th grade.
- The administration board, which includes the principals (headmasters and headmistresses) and secretaries of these schools. They were excluded due to the fact that they do not teach

as much as regular teachers and they usually represent the Palestinian Ministry of Education and Higher Education. As such, their views are expected to be different from those views of the students and the teachers.

4.3 Sampling Approach :

A cluster random sampling of schools was utilized in this study, because the population is concentrated in natural clusters, which are the schools. Cluster sampling is a sampling technique where the entire population is divided into groups or clusters and a random sample of these clusters are selected for the study (Babbie, 2008). Cluster sampling can be used in situations where it would be impossible or impractical to obtain a complete list of all the elements in the population, however, it provides a means of obtaining a larger sample at a lower cost. As such, it increases sampling error and sampling bias that if the group in the population that is chosen as a cluster sample has a biased opinion when compared to the entire population, then we would infer that entire population has the opinions of those in the cluster sample, which may not be the actual case (Babbie, 2008).

4.4 Setting of the study:

The study was conducted in the five governmental schools in Hebron city which were selected randomly by using one stage cluster sampling. These schools are: Al-Sayeda Sara, Gernata B, Ibrahim Abu Daba'at, Mesbah Abu Hanak, and Yosry Al- Natsheh School as seen in the table (4. 1).

4.4.1 *Al-Sayeda Sara School:*

Alsayeda Sara School is a secondary girl's school located on Eesa area in Hebron and it was built in 1991. It has classes from 6^{th} grade to 12^{th} grade. The total numbers of students is 761 students and are taught by 30 teachers(Directorate of Education/ Hebron, 2009).

4.4.2 *Gernata B School:*

This school is located on al Hawoos Al-Thany in south Hebron and it was built in1997. It offers education for girls only in two teaching periods (morning and evening periods). It has

404 female students and 17 teachers. Also it has classes from 1st grade to 10th grade (Directorate of Education\Hebron, 2009).

4.4.3 *Ibrahim Abu Daba'at School:*

The school is located in the northern part of the city of Hebron in the Abu Ktealah Neighborhood. The school has 23 teachers and 446 female students. It was built in 1997 and it has classes from 5th grade to 10th grade (Directorate of Education\Hebron, 2009).

4.4.4 *Mesbah Abu Hanak School:*

It is located in Al-Jaladah Street in Hebron and it is one of the newer boy-only schools in the city that was built in 2006. It has 30 teachers and 729 male students. Also ,it has classes from 10th grade to the 12th grade (Directorate of Education\Hebron, 2009).

4.4.5 *Yosry Al-Natsheh School*:

It is located in the southern part of Hebron in a region called Wadi Al Semen, which is a relatively isolated region in the city, and typically known to be more conservative and socio-economically less fortunate of a neighborhood. The school was built in 2003 and it has classes from the fifth grade to the tenth grade, and it has 230 male students and 14 teachers (Directorate of Education\Hebron, 2009)

4.5 Instrument of the Study:

The data collection tool used in this study was two self-reported questionnaires for teachers and students. These questionnaires were developed by using two validated questionnaires of previous studies (Badh, 2006 and Palestinian Ministry of Education and Higher Education, 2008 a) . Also some questions were added by five experts (two from Al-Quds University, one from the Palestinian Ministry of Health, and the other two were from Directorate of Education /School Health section /Hebron) as shown in table (4.2).

In general, the questionnaire consisted of two sections, as shown in appendix (D & E).Section one included independent variables such as sex, place of residency and qualification of the teachers. Section two included questions about the four components of SHP, which are health

education and promotion (10 items), school nutrition (8 items for students and 7 items for teachers, school health services (12 items) and school health environment (21 items)

Table (4. 2): The source of the questionnaires' items:

Components of SHP	Source of questions	Question number
Health education and promotion (10 questions)	Badh Study (2006)	q1,q 2,q 3,q4
	Ministry of Education Study (2008)	q7,q 8
	Experts	q5,q6,q9,q10
School health services (12 questions)	Badh Study (2006)	q1,q2,q3,q4,q5,q8,q10
	Experts	q6,q7,q9,q11,q12
School health environment (21 questions)	Badh Study (2006)	q1,q2,q6,q7,q8,q9,q10, q11,q12,q14,q18,q20
	Ministry of Education Study (2008)	q19
	Experts	q3,q4,q5,q13,q15,q16,q17, q21
School nutrients(8 questions)	Badh Study (2006)	q3
	Ministry of Education Study (2008)	q2,q4
	Expert	q1,q5 ,q6,q7,q8

The students' questionnaire consisted of (51) items, while the teachers' questionnaire consisted of (50) items, of which all were structured the Likert scale. Most of the questions were similar in both questionnaires, except for the demographic questions were slightly different due to the characteristics of each population. Furthermore, additional question (q1) was added to the nutritional component of the students' questionnaire which was "if the students check the expiry date printed on food items being sold at the school cafeteria".

4.6 The validity and the reliability of the Instrument:

Reliability is a measure of consistency or stability over time and over similar samples which will yield similar respondents data. Also it can be defined as a degree to which a particular technique applied repeatedly to the same object yields the same result each time (Cohen, et al, 2007).

The reliability can be estimated by two ways, which are:

- Test-retest reliability, which administrates the same test to the same sample on two different occasions and assumes that there is no substantial change in the construct being measured between the two occasions (Cohen, et al, 2007).
- Internal consistency reliability: which estimates reliability by grouping questions in a questionnaire that measure the same concept. Then after collecting the responses, these responses are correlated by using Cronbach's Alpha, which is utilized in this study (Polgar & Thomas, 2008).

Cronbach's Alpha coefficient is invented by Professor Cronbach. It is a measure of squared correlation between observed scores and true scores and it is known as an internal consistency estimate of reliability of test scores (Takona, 2002) . The higher the Alpha is, the more reliable the test is. There isn't a generally agreed cut-off. Usually 0.7 and above is acceptable (Burns & Burns, 2008). In the current study the Cronbach's alpha was calculated to assess the reliability (by using the SPSS) and was found to be 0.86 for all the groups of the questions . As such, the reliability of the data and the study is well above the usually accepted value of 0.7.

The reliability is necessary but not sufficient to draw conclusions. It has to be associated with validity (Takona, 2002). The validity of an experiment is the extent to which a test measures what it is intended to measure. In other words, refers to trueness or honesty of a measurement

to provide what it is supposed to provide (Takona, 2002). More formally Cook and Campbell (1979) define it as the "best available approximation to the truth or falsity of a given inference, proposition or conclusion" (Takona, 2002).

There are several types of validity to include :

- Content validity: involves examination of the content to determine whether it covers a representative sample of the behavior domain to be measured(Babbie, 2009),
- Criterion Validity: which assess whether a test reflects a set of abilities in a current or future setting, if the criterion is taking place in the future it is called predictive validity, and if the criterion is taking place in here and now it is concurrent(Salkind,2009)
- Construct Validity: refers to the totality of evidence about whether particular operationalizations of a construct adequately represent what is intended by theoretical account of the construct being measured (Babbie, 2009),
- Face Validity: it can be described as a sense that the questionnaire looks like it measures what it was intended to measure, it is a quick review rather than an in depth examination(Abramson & Abramson, 1999) .

The content validity of the study questionnaire was examined by five experts (two from Al-Quds University, one from the Palestinian Ministry of Health, and two from the Directorate of Education\ School Health section/ Hebron). In addition two focus groups of ten teachers and ten students from two schools in Hebron city (Asmaa Bent Abu Baker School and Ibn Rushd School) were conducted. Asmaa Bent Abu Baker School is for girls and it has classes from seventh grade to tenth grade. There are twelve female teachers and 136 female students and it has two teaching (morning and evening) periods. Ibn Rushd School is for boys and it has classes from ninth grade to tenth grade also it has 21 male teachers and (470) students.

The two focus groups examined the contents of the questionnaires. They were asked about the clarity, content and any suggested alternatives questions. Based on their feedback and comments, language changes to some questions were made to ensure better understanding of the questions by students and teachers.

4.7 Data Collection:

After sending a formal letter to the Directorate of Education in Hebron city explaining the purpose of the study, the researcher was asked to provide two copies of the questionnaires in order to send it to the Palestinian Ministry of Education and Higher Education/ the Directorate General of General Education in Ramallah for approval. The study was approved and a permission to conduct the research was granted in November 18th, 2009.

After receiving the permission, the researcher personally distributed the self-reported questionnaire to the five selected schools. The data collection process took ten days starting from November 22nd 2009, and ending on December 3rd 2009. The school administrators and principals of all the five schools were very helpful and played a critical and important role in facilitating data collection and encouraging the students and teachers to participate in the study. Also the teachers who are in charge of the 10th grade classes and the secretaries of the schools assisted the researcher in distributing the questionnaire for the students and teachers. This was an important factor in obtaining a very high response rate which was 100%.
More than 80% of the questionnaires were collected during the morning break period in the first days of data collection. Teachers and students who were on leave or absent during the day of data collection filled in the questionnaire mainly through direct contact with the researcher after their return to school next days.

4.8 Statistical Analysis:

The data was analyzed by using the Statistical Package for Social Science (SPSS), Version 15.0. The data were checked for entry errors (data clearance). Characteristics of the sample were obtained through descriptive analysis (frequencies). Relationships between selected variables were analyzed by using of the Chi-squared and Fisher tests.

4.9 Ethical Considerations:

Before starting the survey, the proposal was submitted to the Faculty of Public Health at Al-Quds University who gave approval to conduct this study according to the thesis preparation guide of the Factually of Graduate Studies. In order to gain access to the governmental schools in Hebron city, further approvals were needed to conduct the research in accordance with the established protocols. The General Director of the Directorate of Education-Hebron was formally approached via an introductory letter which presented information about the proposed study and its purpose. The letter requested a permission to conduct the research in the governmental schools and a copy of the questionnaire was also provided, and an approval was granted.

In an attempt to ensure that the ethical standards of research are met, the researcher provided a short introduction to the student and teacher about the study. In addition, a cover letter and a statement were also provided where the objectives of the study and its importance were explained. The participants were reassured that the answers are confidential. Furthermore, the participants were reminded that participation in the study was purely voluntary, and participants had the right to decline to participate, even when the statements specifically mention that the confidentiality and the privacy of the subjects were fully respected and protected. The statements explicitly mention that the findings would be referred to and expressed only in general terms. No identifying mechanisms, like names or codes, were used to trace individual answers to a particular participant.

Summary:

- This study relies upon non-experimental quantitative research to assess the implementation of SHP components at the governmental school in Hebron according to the students' and teachers' perspectives.
- A cross-sectional design was utilized because it is useful for the descriptive purposes. Also cluster sampling was used and all students of the 10^{th} grades (429) and all the teachers (114) from the five selected schools were included (Sayeda Sara, Gernata b, Mesbah Abu Hank, Yosry Natsheh and Ibrahim Abu Daba'at).
- The data collection tool was two self-reported questionnaires; one for students (with 51 items) and the other for teachers (with 50 items).
- The questions were derived from two previous studies and from five experts from Al-Quds University, the Directorate of education /School Health Section/Hebron, and the Palestinian Ministry of Health.
- The questionnaire was structured along the Likert scale to cover the four components of SHP which are school health services, school health environment, school nutrients and health education.
- The data was analyzed by using Statistical Package for Social Science (SPSS), Version 15.0. The reliability of the instrument was tested by using Cronbach's Alpha coefficient. The result was high 0.86, which is well above the acceptable cut off limit accepted by most researchers.
- The content validity of the questionnaire was assessed by the five experts and two focus groups of teachers and students.

Chapter Five

Results

Chapter five
Results

Introduction :

As mentioned in the previous chapter, in order to achieve the main aim of the current study, a cross sectional study was utilized. A self-reported questionnaire was distributed to 114 teachers and 429 students of the 10^{th} grade from the five selected schools in Hebron city, which are Alsayeda Sara, Gernata b, Mesbah Abu Hanak, Yosry Natsheh and Ibrahim Abu Daba'at.

The questionnaire consisted of two sections: section one included independent variables such as gender, place of residency, specialty and qualification, and section two included questions related to the four components of SHP which are health education and promotion, school health environment, school nutrition and school health services. The teachers' questionnaire consisted of 50 items and the students' questionnaire included 51 items. Cross tabulation was carried out by using the Chi squared and Fisher exact tests. The results of the study are illustrated in tables and figures to facilitate the understanding and the interpretation of these findings.

This chapter presents the findings of the current study in three sections as follows:
Section one: Description of the characteristics of the study participants
Section two: Students' responses to the questions related to the four components of SHP
Section three: Teachers' responses to the questions related to the four components of SHP

5.1 Section one: The characteristics of the participants:

The students and all the teachers of the five selected schools were targeted to participate in this study. The sample consisted of 429 students and 114 teachers. A total of 543 questionnaires were distributed and a total of 114 teachers and 429 students returned the questionnaires during the ten days of data collection. The final response rate was 100%.

As shown (figure 5.1.1), the vast majority of the students were females (66.7 %, n=286), whereas 33.3% (n=143) were males.

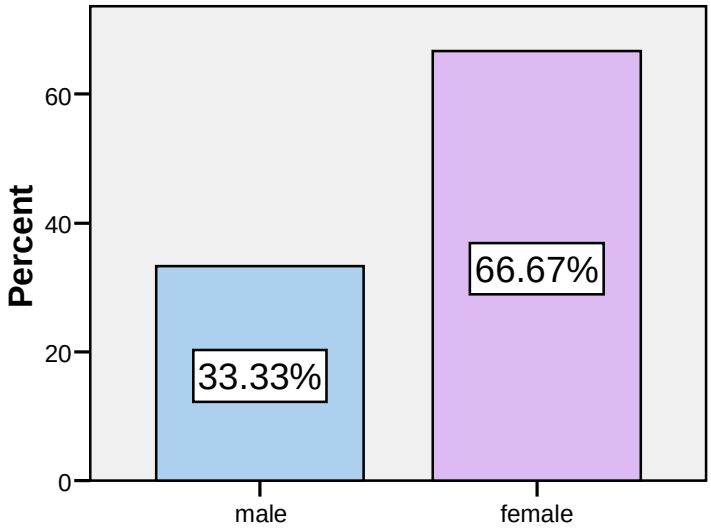


Figure 5.1.1 The distribution of the students by gender

Of the 429 students, 96.7 %(n=415) live in the city, 2.8 %(n=12) live in a village and a few (0.5%, n=2) live in a refugee camp (see figure 5.1.2).

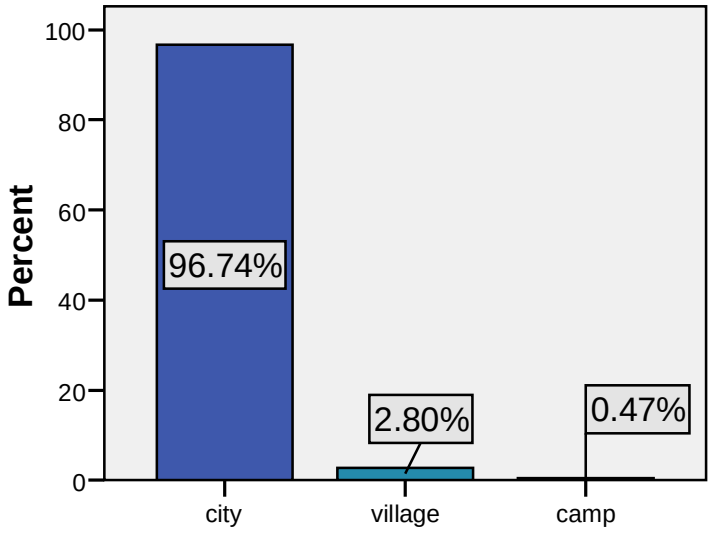


Figure 5.1.2 The distribution of the students by place of residency

For teachers, the vast majority were females (61.4 %, n=70), while 38.6 %(n=44) were males (see figure 5.1.3).

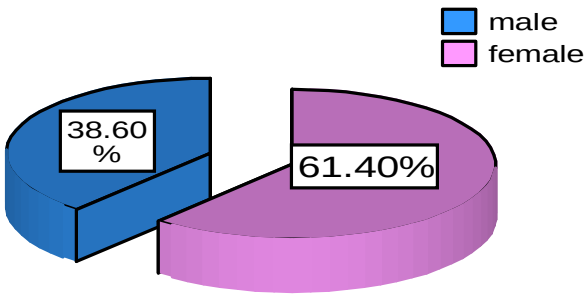


Figure 5.1.3 The distribution of teachers by gender

89.5% (n=102) of the teachers live in the city, 9.6% (n=11) live in a village and only 0.9% (n=1) live in a refugee camp (see figure 5.1.4)

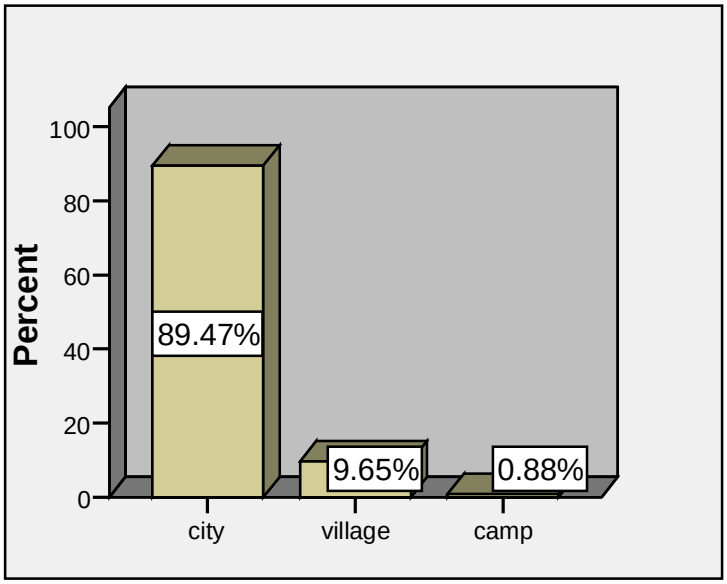


Figure 5.1.4 The distribution of teachers by place of residency

With regard to teachers' scientific specialization, 48.2% (n=55) were specialized in science such as mathematics, science, biology, physics and chemistry, while 32.5% (n=37) were specialized in arts such as drawing, physical education and languages. However, 19.3% (n=22) did not state their specialty (see figure 5.1.5).

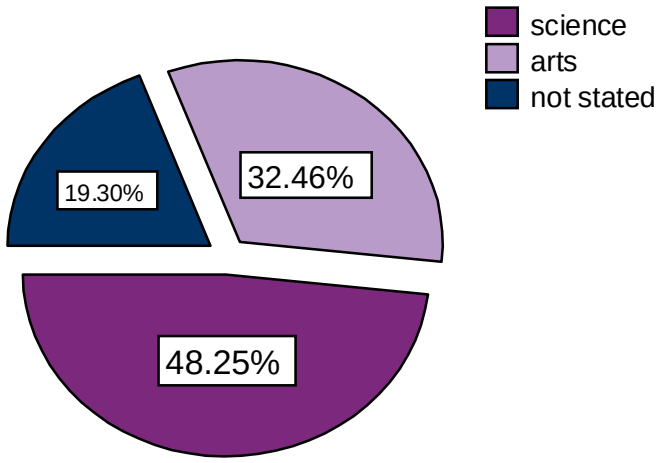


Figure 5.1.5 The distribution of the teachers' scientific specialization

Finally, the majority of the teachers (87.7 %, n=100) had a bachelors degree, whereas 9.6 % (n=11) had a diploma degree, and 2.6 % (n=3) had a masters degree (See figure 5.1.6).

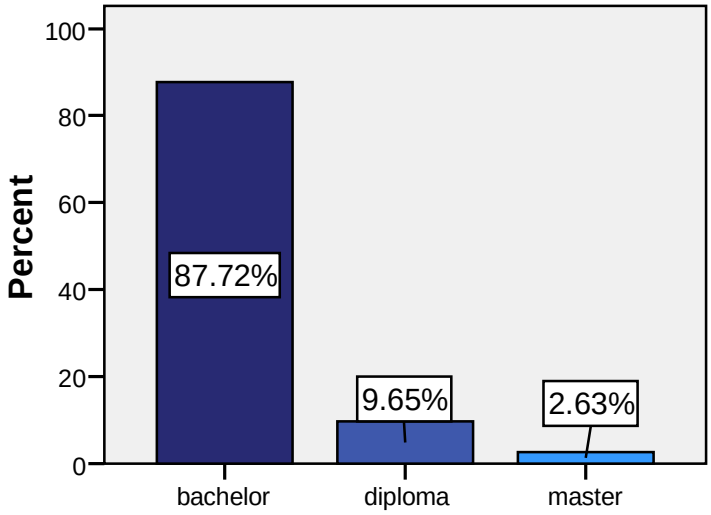


Figure 5.1.6 The distribution of the teachers by qualification

Section two: Students' responses to the questions related to the four components of SHP :

As mentioned previously, the students' questionnaire included 51 items which were related to the implementation of the four components of the school health program in their schools: health education (10 questions), school nutrients (8 questions), school health services (12 questions) and school health environment (21 questions). This section represents their answers in more detail.

5.2 The health education and promotion :

First, students were asked about the existence of a health committee at school. More than half of the students (69.5%, n=298) reported that there is "always or often" a health committee at school, while only 16.5% (n=71) of them indicated "never or rarely". Additionally, more than two thirds of the students (67.9%, n=291) reported that they are "always or often" aware of the importance of the school hygiene facilities such as toilets, the school yard and the classroom, while more than one fourth of the respondents (27.8%, n=119) reported "never or rarely" or "sometimes".

Another important item of the health education and promotion is the environmental and hygienic awareness materials which provide critical information to the students and can change certain unhealthy behaviors when posted on the bulletin board. Half of the respondents (50%, n=193) reported that the bulletin board displayed environmental and hygienic awareness materials "always or often", while 27.8%
(n=119) stated that these bulletins were "never or rarely" posted, and nearly the same percentage(27%,n=116) indicated that it was "sometimes". Also, more than half of the respondents (60%, n=253) reported that health information was "always or often" broadcasted over school radio, while one sixth of the students (15.4%, n=66) indicated "rarely or never", and 25.4% (n=109) responded "sometimes".

Furthermore, organizing competitions and voluntary activities for students further allow incentives to act in a certain way . Health issues can be designed and implemented through competitions and voluntary activities. Unfortunately, less than half of the students (47.1%,

n=202) indicated that competitions were "never or rarely" organized at school, while one fourth of the respondents (25.4%, n=109) reported that these competitions were "always or often" organized, and 27% (n=116) reported that these competitions were "sometimes" organized. On other hand, 47.8% (n=204) of the respondents indicated that they were "always or often" involved in voluntary activities at school such as the cleaning day and the environmental day, while 33.1% (n=142) responded that they "never or rarely" were so.

In addition, schools actively and regular engagement in hygiene inspections to ensure that the students understand the importance of healthy personal hygiene as one function of health education and promotion. 55% (n=236) of the participants reported that their personal hygiene was "always or often" inspected regularly at school, 22.6% (n=97) indicated that their personal hygiene is “sometimes" inspected, and nearly the same percentage (23.1%,n=95) stated that it "never or rarely" was inspected. More than the half of students (65.6%,n=281) stated that they were "always or often" aware of the importance of personal hygiene, although the minority (12.8%,n=55) responded that they were "never or rarely" aware of its importance.

Another critical rule of the school health education and promotion is instructing students to inspect the expiration dates of the various food materials that are sold at schools. Nearly half of the respondents (49.7%, n=213) reported that they were "always or often" aware of the importance of checking the expiry date and 31.5% (n=135) reported that they "never or rarely " were so.

Finally, less than half of the participants (46.9%,n=201) indicated that the health awareness publications were " never or rarely" being disseminated at school, and only 31.4% (n=135) stated that these publications were " always or often" disseminated (see table 5.2).

Table 5.2 The percentage and frequency of students' responses to the health education and promotion related questions:

No.	Paragraph	Always		Often		Sometimes		Very rarely		Never		Missing	
		%	freq	%	freq	%	freq	%	freq	%	freq	%	freq
1.	There is a health committee at school	53.4	229	16.1	69	13.8	59	7.9	34	8.6	37	0.2	1
2.	You are aware of the school's hygiene facilities	45.5	195	22.4	96	15.9	68	8.6	37	7.7	33	0	0
3.	Bulletin boards are posted at school	25.6	110	19.3	83	27	116	14	60	13.8	59	0.2	1
4.	Health information is brodcast over the school radio	34.5	148	24.5	105	25.4	109	11.2	48	4.2	18	0.2	1
5.	Competitions are organised at school	8.6	37	16.8	72	27	116	21.7	93	25.4	109	0.5	2
6.	You are involved in voluntary activities	26.8	115	20.7	89	19.1	82	11	47	22.1	95	0.2	1
7.	Your personal hygiene is inspected regularly	35	150	20	86	22.6	97	12.1	52	10	43	0.2	1
8.	You are aware of your personal hygiene	41.5	178	24	103	21	90	8.4	36	4.4	19	0.7	3
9.	SHP increases your awareness about checking the expiry date on food items	15.6	67	15.9	68	18.4	79	17.5	75	32.2	138	0.5	2
10.	Health awarness publications are being disseminated at school	17.9	77	13.5	58	21.4	92	21.7	93	25.2	108	0.2	1

5.3 School nutrition:

The nutritional component consisted of 8 questions. For example, the students were asked if they actually check the expiry date of food items sold at school. More than one third of the participants (39.9%, n=171) reported that they "always or often" check the expiry date printed on food items, and 33.4% (n=143) indicated that they "rarely or never" check the expiry date compared to 26.8% (n=115) who "sometimes" do so. Also, the students were asked if the food and the beverages that are sold in the school canteen are healthy, and 46.1% (n=198) indicated that there was "never or rarely" healthy food in the canteen, while more than one third of the participants (38.2%,n=164) reported that there was "always or often" healthy food in the canteen. Furthermore, 32.1% (n =138) of the participants reported that the information about the importance of nutrition and nutrious food was "always or often" broadcast over the school radio, while nearly the same percentage of the students (32.6%, n=140) indicated that this information was "never or rarely" broadcast, and more than one third of them (34.7%, n=149) responded that the information was "sometimes" broadcast over school radio.

The distribution of free nutritious meals for students is another important service of the nutrition component. The majority of the participants (92.5%,n=397) reported that the school "never or rarely" distributed free nutrious meals, while only 3.5% (n=15) indicated "always or often", and 4.2% (n=18) reported it as "sometimes".

In addition to the previous items, the hygiene of the workers who handle the food at schools also has serious implications. Less than half of the students (46.4%,n=199) indicated that the workers in the canteen were "always or often" cautious of their personal hygiene, while 32.4% (n=139) stated it as "never or rarely." Also, 41.2% (n=177) reported that the food and other related items were "never or rarely" kept covered in a clean environment, whereas 38.5% (n=165) stated that as "always or often" .

Finally, 73.7 % (n=316) of the participants reported that the canteen "always or often" had a refrigerator compared to only 18 % (n=77) who indicated that as "never or rarely". The vast majority of the participants (92.5%, n=397) stated that chips and chocolate were "always or often" sold in the canteen, while only 5.1%(n=22) of them indicated that the availability of these items as "never or rarely" in the school canteen (See table 5.3).

Table 5.3 The percentage and frequency of students' responses to the school nutrition related questions:

No.	Paragraph	Always		Often		Sometimes		Very rarely		Never		Missing	
		%	freq	%	freq	%	freq	%	freq	%	freq	%	freq
1.	You check the expiry date	23.1	99	16.8	72	26.8	115	13.8	59	19.6	84	0	0
2.	There is healthy food and drinks in the school canteen	24	103	14.2	61	15.4	66	12.1	52	34	146	0.2	1
3.	Information about importance of nutrition is brodcast over school radio	14.9	64	17.2	74	34.7	149	18.4	79	14.2	61	0.5	2
4.	The school distributes free nutritious food items	0.9	4	2.6	11	4.2	18	14	60	78.1	335	0.2	1
5.	Workers in the canteen are cautious about their personal hygiene	29.6	127	16.8	72	19.8	85	15.4	66	17	73	1.4	6
.6	Food is kept in a clean environment	22.4	96	16.1	69	19.8	85	13.5	58	27.7	119	0.5	2
7.	The canteen has a refrigerator	64.8	278	8.9	38	7.5	32	4.9	21	13.1	56	0.9	4
8.	Chips, chocolate, etc. are being sold in the canteen.	88.1	378	4.4	19	2.3	10	1.6	7	3.5	15	0	0

5.4 School health service:

The students were asked about the different services that are offered at their schools such as dental examination, eyesight test and vaccinations. For example, a health card is used to document the frequency and the type of school health services that students use. The majority of the participants (75.8%, n=325) reported that they "never" held a health card at school, while 13.7% (n=59) indicated it as "always and often", and 11 students (2.6%) did not answer this question. Furthermore, two thirds of the respondents (66%, n=283) reported that they were "always or often" given vaccines during their school years, although 19.9% (n=85) indicated it as "very rarely or never" and only 14.2% (n=61) stated receiving vaccines "sometimes". Moreover, 42.4% (n=182) reported that their hair hygiene was "very rarely or never" inspected, while 30.3% (n=130) indicated that their hair hygiene was "always or often" inspected, and 25.6% (n=110) reported it as "sometimes."

In the case of suspicion of infection, 56.2% (n=241) stated that the school administration "very rarely or never" called professional health assistance, while 30.3% (n=130) reported it as "always or often" and seven students (1.6%) did not answer this question. In emergency situations such as student injuries, 70.8% (n=304) indicated that students are "always or often" assisted or transferred to hospital and 17.7% (n=96) reported it as "rarely or never".

For dental examination, 41.7% (n= 179) indicated "never or rarely" having this examination, 38.5% (n=165) stated that they "always or often" undergo dental examinations and 19.8% (n=85) answered that they "sometimes" had dental examinations. For the eyesight test 41.6% (n=178) of the participants stated that it was "rarely or never" conducted at school, and 39% (n=267) of them reported that eye exams "always or often" took place at school. Also, the majority of the students (82.9%, n=355) indicated that their schools "rarely or never" had a clinic while only 12.6% (n=54) reported that as "always and often" and 4 students (0.9%) did not answer. A high percentage of the participants (92%, n=395) claimed that there was "never or rarely" a doctor or a nurse at their schools and 5.1% (n=22) stated that the nurses or the doctors were available at their schools " always or often" .

Another interesting finding is that more than half of the participants (51.2%,n=219) indicated that school was "never or rarely" being visited by a school health team, while 27.6% (n=118) reported it as "always or often" and 20.8% (n =89) stated it as "sometimes". In addition, 83.9% (n=360) of the students reported that there is "always or often" a first–aid kit at school, and only 9.3% (n=40) responded it as "never or rarely". Finally, nearly half of the respondents (49.9%,n=214) stated that they or other students "always or often" faced health issues that required treatment within the school, while 20.7% (n=29) indicated it as "sometimes" and 29.1% (n=125) reported it as " never or rarely" (see table 5.4).

Table 5.4 The percentage and frequency of students' responses to the school health services related questions :

No	Paragraph	Always		Often		Sometimes		Very rarely		Never		Missing	
		%	freq	%	freq	%	freq	%	freq	%	freq	%	freq
1.	You hold a health card at school	11.4	49	2.3	10	4.4	19	3.5	15	75.8	325	2.6	11
2.	You are given vaccines at school	56.4	242	9.6	41	14.2	61	7.5	32	12.4	53	0	0
3.	Your hair hygiene is inspected at school	15.2	65	16.1	69	25.6	110	17.5	75	24.9	107	0.7	3
4.	In case of suspicion of infection, the school administration calls for professional health assistance	19.1	82	11.2	48	11.9	51	14.5	62	41.7	179	1.6	7
5.	In case of emergency, the student is assisted or transferred to hospital	56.6	243	14.2	61	11.2	48	7.2	31	10.5	45	0.2	1
6.	Dental examination is conducted	26.8	115	11.7	50	19.8	85	14.7	63	27	116	0	0
7.	Eyesight test is conducted	26.6	114	12.4	53	19.4	83	17.8	76	23.8	102	0	0
8.	The school has a clinic	8.2	35	4.4	19	4	17	8.6	37	74.3	318	0.5	2
9.	There is a doctor or nurse at school	2.8	12	2.3	10	1.9	8	3.7	16	88.3	379	0.9	4
10.	The school is visited by a school health team	14.7	63	12.9	55	20.8	89	20.6	88	30.6	131	0.5	2
11.	There is a first-aid kit at school	73.2	314	10.7	46	6.8	29	3.7	16	5.6	24	0	0
12.	The students face health issues requiring treatment within the school	35	150	14.9	64	20.7	89	11.2	48	17.9	77	0.2	1

5.5 School health environment:

A clean well-ordered school environment helps students in developing good habits of cleanliness and decrease the threat of the spread of illness. As shown in table 5.5, the majority of the participants (87.9%, n=377) reported that there was "always or often" a rubbish bin in the school yard, while only 5.6% (n=44) indicated "never or rarely". Also, the majority of the students (75.2%,n=321) stated that the school yard was "always or often" spacious, while 20.1% (n=86) reported that it was "never or rarely" spacious. Additionally, 37.7% (n=162) of the respondents indicated that the school yard was "always or often " clean, while 33.6% (n=144) reported it as "never or rarely" and 27.7% (n=119) indicated it as clean "sometimes". For the existence of green gardens at schools, the students' responses were divided equally as less than half of the students (46.6%, n=200) reported their school "always or often" has a garden, and nearly the same percentage (45.2%, n=194) indicated it as "never or rarely".

The temperature and the indoor climate is also a very essential component of school environment for both the students and the teachers. The availability of air conditioning during the hot seasons and a heating system during the cold seasons make students feel comfortable, decrease their absenteeism and improve concentration. Unfortunately, a high percentage of the participants (83.5%, n=358) stated that there were "never or rarely" air conditioning units at school, while only 11.2% (n=48) reported it as "always or often". Likewise, the majority of the respondents (80.2%,n=344) indicated that there was "never" a heating system at their schools, and only 7.7% (n=33) stated "always or often" having such a system at their schools.

In regard to the availability of water and bathroom facilities at school, less than half of the students (45%, n=193) indicated that there are "never or rarely" appropriate sinks at school and more than one third (37.8%,n=162) of them claimed that appropriates sinks were available "always or often" at their school. In addition, 49% (n=210) of the participants stated that drinking water was "always or often" accessible at school, while 26.5% (n=114) reported it as "never or rarely" and 24%(n=103) indicated it as "sometimes". Interestingly, even though nearly half of the students indicated the availability of water at their school, 65.8% (n=282) reported that they "never or rarely" drink from the tap water at their schools and only 20.3%

(n=87) stated that they "always or often" drink school tap water. Nearly, half of the respondents (49.2%, n=211) claimed that water's taste was "never or rarely" fine, while 28.5% (n=122) reported that the water's taste was "always or often" fine. Also, the majority of the participants (60.6%, n=260) reported that the drinking water was "never or rarely" smelly, whereas 22.6% (n=97) indicated that it was "always or often" smelly. Finally, 48.8% (n=209) of the respondents stated that the toilets were "always or often" provided with water, and 36.1% (n=155) reported them as "never or rarely". Regarding the cleanliness of toilets at school, the majority (68.1%, n=292) stated that toilets were "never or rarely" clean, while only 12.8 % (n=55) indicated toilets were "always or often" clean, and 18.4% (n=55) reported that toilets were "sometimes" clean.

Being comfortable at school such as having adequate usable space, lighting, temperature and climate control and sanitation is another crucial element of school health environment. 68.5% (n=294) of the respondents stated that the classroom was "always or often" compatible with the students' number, while 22.1% (n=95) reported it as "never or rarely". Also, the vast majority of the students (94.9%, n= 407) stated that there were "always or often" windows in the classroom and only 3% (n=13) answered it as "never or rarely ". Likewise, 96% (n=412) of the respondents indicated that the windows "always or often" have bars, whereas only 3% (n=13) of them reported that as "never or rarely". Furthermore, 76.6% (n=329) stated that the classroom had enough ventilation "always or often", and 10.2% (n=44) of them answered it as "never or rarely". Lastly, 91.4% (n=392) of the participants indicated that there was "always and often" a rubbish bin in the classroom.

For classroom cleaning, 63.2% (n=271) stated that their classrooms were "always or often" cleaned periodically, while only 18.4% (n=79) indicated that their classrooms were "never or rarely" cleaned. Similar to the previous results, the majority of the participants (75.8%, n=325) indicated that there was "always and often" appropriate lighting in the classroom, whereas only 11.2% (n=48) reported it as "never or rarely." Finally, for seat comfortability, less than half of the students (45.4%, n=194) indicated that their seats were "always and often" comfortable, and 41.8 % (n=179) reported it as "never or rarely" (See table 5.5).

Table 5.5 The percentage and frequency of students' responses to the school health environment questions:

No.	Paragraph	Always		Often		Sometimes		Veryrarely		Never		Missing	
		%	freq	%	freq	%	freq	%	freq	%	freq	%	freq
1.	There is a rubbish bin in school yard	79.3	340	8.6	37	6.5	28	2.6	11	3	13	0	0
2.	The school yard is spacious	66.5	284	8.7	37	4.2	18	3.5	15	16.6	71	0.5	2
3.	The school yard is clean	15.6	67	22.1	95	27.7	119	15.4	66	18.2	78	0.9	4
4.	The school has a green garden.	36.6	157	10	43	8.2	35	10	43	35.2	151	0	0
5.	There are air conditioning units	8.2	35	3	13	5.1	22	8.4	36	75.1	322	0.2	1
6.	There are heating systems at school	4.7	20	3	13	3.7	16	8.4	36	80.2	344	0	0
7.	There are appropriate sinks	23.3	100	14.5	62	16.8	72	15.2	65	29.8	128	0.5	2
8.	Drinking water is accessible at school	30.8	132	18.2	78	24	103	11.7	50	14.9	64	0.5	2
9.	You drink from the tap water at school	13.5	58	6.8	29	14	60	11.7	50	54.1	232	0	0
10.	The drinking water tastes fine.	15.4	66	13.1	56	20.3	87	10.5	45	38.7	166	2.1	9
11.	The drinking water at school is smelly	14.2	61	8.4	36	15.6	67	14.2	61	46.4	199	1.2	5
12.	Toilets are provided with water	33.6	144	15.2	65	14.7	63	10.5	45	25.6	110	0.5	2
13.	The school toilets are clean	4.4	19	8.4	36	18.4	79	19.8	85	48.3	207	0.7	3
14.	The space of the classroom is compatable with the student number	54.3	233	14.2	61	9.3	40	4.4	19	17.7	76	0	0
15.	There are windows in the classroom	91.4	392	3.5	15	2.1	9	0.9	4	2.1	9	0	0
16.	There are bars on the windows in the classroom.	92.5	397	3.5	15	0.9	4	0.2	1	2.8	12	0	0
17.	The classroom gets enough ventilation	63.9	274	12.8	55	13.1	56	1.6	7	8.6	37	0	0
18.	There is a rubbish bin in the classroom	85.1	365	6.3	27	4.9	21	1.9	8	1.9	8	0	0
19.	Classrooms are being cleaned	48	206	15.2	65	18.2	78	12.1	52	6.3	27	0.2	1
20.	There is appropriate lighting in the classroom	60.6	260	15.2	65	13.1	56	5.1	22	6.1	26	0	0
21.	Your seat is comfortable	31.1	133	14.3	61	12.9	55	7	30	34.8	149	0	0

Cross-tabulation by using the Chi-squared and Fisher exact tests were done to assess the relationship between students' responses and some independent variables such as gender and participants' schools. The statistical significance was defined as a *P*-value of less than 0.05.

As shown in Table 5.6, the cross tabulation between students' gender and their responses to the health education and promotion related questions revealed a statistically significant difference between males' and females' responses to the all questions in this section, except question 7. In general, female students responded more positively than male students who answered "rarely and never" more.

For example, 69.2% (n=198) of the female participants versus 21.7% (n= 31) of the male participants reported that there was "always" a health committee at school, while 21.7% (n=31) of the male students and only 2.1% (n= 6) of the female students responded "never " (p=.00). Also, 44.8% (n= 128) of the female students and 14% (n=20) of the male students indicated that health information was "always" broadcast over the school radio. This result was statistically significant (p=.000).

For the awareness about the personal hygiene, 48.6% (n=139) of the female respondents versus 27.3% (n=39) of the male respondents indicated that they were "always" aware of the personal hygiene, whereas 14% (n=20) of the male students and only 5.6% (n=16) female students stated it as " very rarely".(p=.000). Likewise, 39.2% (n=56) of the male students versus 28.7% (n=82) of the female students stated that they were "never" aware of checking the expiry date on food items, while 18.5% (n=14) of female and 9.5% (n=53) of the male students indicated that as "always"(p=.004). For the dissemination of health awareness publications at school, 44.1% (n=63) of the male students versus 15.7% (n=45) of the female students indicated that these publications were " never " had been disseminated (p=0.000).

Table 5.6: Distribution of students' responses to the health education and promotion related questions by gender :

No.	Paragraph	Sex	Always		Often		Sometimes		Very rarely		Never		Missing		P
			freq	%	freq	%	freq	%	freq	%	freq	%	freq	%	
1.	There is a Health Committee at school	M F	31 198	21.7 69.2	20 49	14 17.1	36 23	25.2 8	25 9	17.5 3.1	31 6	21.7 2.1	0 1	0.0 0.3	.000*
2.	You are aware of the school hygienic facilities	M F	36 159	25.2 55.6	28 68	19.6 23.8	35 33	2.5 11.5	23 14	16.1 4.9	21 12	14.7 4.2	0 0	0 0	.000
3.	Bulletin boards are posted at school	M F	21 89	14.7 31.1	22 61	15.4 21.3	31 85	21.7 29.7	30 30	21 10.5	39 20	27.3 7	0 1	0.0 0.3	.000*
4.	Health information is brodcast over the school radio	M F	20 128	14 44.8	41 64	28.7 22.4	36 73	25.2 25.5	32 16	22.4 5.6	14 4	9.8 1.4	0 1	0.0 0.3	.000*
5.	Competitions are organised at school	M F	6 31	4.2 10.8	18 54	12.6 18.9	33 83	23.1 29	39 54	27.3 18.9	46 63	32.2 22	1 1	0.7 0.3	.005*
6.	You are involved in voluntary activities at school	M F	24 91	16.8 31.8	30 59	21 20.6	25 57	17.5 19.9	19 28	13.3 9.8	45 50	31.5 17.5	0 1	0.0 0.3	.002*
7.	Your personal hygiene is inspected regularly	M F	41 109	28.7 38.1	34 52	23.8 18.2	33 64	23.1 22.4	23 29	16.1 10.1	12 31	8.4 10.8	0 1	0.0 0.3	.152*
8.	You are aware of personal hygiene	M F	39 139	27.3 48.6	28 75	19.6 26.2	42 48	29.4 16.8	20 16	14 5.6	13 6	9.1 2.1	1 2	0.7 0.7	.000*
9.	You are aware of checking the expiry date on food items	M F	14 53	9.8 18.5	17 51	11.9 17.8	24 55	16.8 19.2	30 45	21 15.7	56 82	39.2 28.7	2 0	1.4 0.0	.004*
10.	Awareness publications are being disseminated at school	M F	6 71	4.2 24.8	9 49	6.3 17.1	22 70	15.4 24.5	43 50	30.1 17.5	63 45	44.1 15.7	0 1	0.0 0.3	.000*

P values marked with (*) were derived using the Fisher exact test. All others were done using the Chi-square test.

As for nutrition related questions, the Chi-squared and Fisher exact tests revealed a significant difference between male and female students as shown in Table 5.7. Similar to previous results, the female students tend to answer “always” more often than male students who tend to answer “never” for most of the questions. For example, 16.1% (n=46) of the female students versus 9.1%(n=13) of the male students indicated that they " very rarely " checked the expiry date in the school canteen, and 21% (n=30) of the male participants versus 18.9% (n=54) of the female participants stated " never " (p=.049). Also, 35.7% (n=51) of the boys versus 33.2% (n=95) of the girls indicated "never" for the presence of healthy food and drinks in the school canteen, while 26.6% (n=76) of the female students and 18.9% (n=27) of the male students reported that as "always"(p=.036)

Moreover, 27.3% (n=39) of the male participants versus 7.7% (n=22) of the female participants indicated that information about the importance of nutrition is "never" broadcast over the school radio, while 19.2% (n= 55) of the female students versus 6.3% (n= 9) of the male students reported it as "always”(p=0.000). Also, the majority of the male students (83.9%,n=120) and 75.2% (n=215) of the female students indicated that the school " never " distributed free nutritious food items. This result was found to be statistically significant (p=.039).

For the workers' personal hygiene, 39.2% (n=112) of the female respondents versus 10.5% (n=15) of the male respondents reported that the workers were "always" cautious of their personal hygiene, while 26.6% (n=38) of the male students versus 12.2% (n=35) of the female students stated it as "never " (p=0.000).

In regard to the availability of a refrigerator in the school canteen, 71.7% (n=205) of the female students versus 51% (n=73) of the male students indicated that there was "always" a refrigerator in the canteen, while 18.2% (n=26) of the male students versus 10.5% (n=30) of the female students reported it as "never" (p = .000).

Finally, as for selling chips and chocolate, 96.9% (n=277) of the female respondents versus 70.6% (n=101) of male students reported that chips and chocolate were "always" sold in the school canteen, while 9.8% (n=14) of the male students and only 0.3% (n=1) of the female answered it as "never "(p=0.000).

Table 5.7: Distribution of students' responses to the school nutrition related questions by gender:

No.	Paragraph	sex	Always		Often		Sometimes		Very rarely		Never		Missing		P
			freq	%	freq	%	freq	%	freq	%	Freq	%	freq	%	
1.	You check the expiry date in the school canteen	M F	38 61	26.6 21.3	17 55	11.9 19.2	45 70	31.5 24.5	13 46	9.1 16.1	30 54	21 18.9	0 0	0 0	.049
2.	There are healthy foods and drinks in school canteen	M F	27 76	18.9 26.6	16 45	11.2 15.7	32 34	22.4 11.9	17 35	11.9 12.2	51 95	35.7 33.2	0 1	0 0.3	.036*
3.	Information about the importance of nutrition are being brodcasted through the school radio	M F	9 55	6.3 19.2	18 56	12.6 19.6	36 113	25.2 39.5	40 39	28 13.6	39 22	27.3 7.7	1 1	0.7 0.3	.000*
4.	The school distributes free nutritious food items	M F	0 4	0 1.4	6 5	4.2 1.7	6 12	4.2 4.2	11 49	7.7 17.1	120 215	83.9 75.2	0 1	0 0.3	.026*
5.	Workers in the canteen are cautious about their personal hygiene	M F	15 112	10.5 39.2	26 46	18.2 16.1	29 56	20.3 19.6	34 32	23.8 11.2	38 35	26.6 12.2	1 5	0.7 1.7	.000*
6.	Food kept in clean environment	M F	17 79	11.9 27.6	15 54	10.5 18.9	30 55	21 19.2	24 34	16.8 11.9	57 62	39.9 21.7	0 2	0 0.	.000*
7.	The canteen has a refrigerator	M F	73 205	51 71.7	17 21	11.9 7.3	15 17	10.5 5.9	12 9	8.4 3.1	26 30	18.2 10.5	0 4	0 1.4	.000*
8.	Chips, chocolate are being sold in the canteen	M F	101 277	70.6 96.9	16 3	11.2 1	8 2	5.6 0.7	4 3	2.8 1	14 1	9.8 0.3	0 0	0 0	.000*

P values marked with (*) were derived using the Fisher exact test. All others were done using the Chi-square test.

There was a statistically significant relationship between male and female students in relation to the school health service questions except four questions (q3,q4,q8, and q9) which were not statistically significant as shown in Table(5.8).

For example, 77.6% (n=111) of the male students and 74.8% (n=214) of the female students indicated that they "never" held a health card at school, while 12.6% (n=3) of the female respondents and only 9.1% (n=13) of the male respondents stated that as "always"(p=.04).

Moreover, 76.6% (n=219) of the female respondents versus 16.1% (n=23) of the male students indicated that they "always or often" were given vaccines at school, while 25.2% (n=36) of the male participants versus 5.9% (n=17) of the females stated it as "never" (p=0.000).

In the case of suspicion of infection, 44.4% (n=64) of the male students and 40.7% (n=115) of the female students indicated that the school administration "never" called for professional health assistance, while only 21.7% (n=62) of the female participants and 14% (n=20) stated it as "always". This result was statistically non significant (p=.122).

For dental examinations, 32.5% (n=93) of the females and 15.4% (n=22) of the males indicated that they were "always" conducted, while 29.4% (n=42) of the male students and 25.9% (n=74) of the female students reported it as "never" (p= 0.000) .

Furthermore, 41.3% (n=59) of the male students versus 25.3% (n=72) of the female students reported that the school was "never" visited by a school health team, and 21% (n=30) of the male students versus 20.7% (n=59) of the female students indicated that as "sometimes" (p=.001).

Finally, 44.8% (n=128) of the female respondents versus 15.4% (n=22) of the males indicated that they "always" face health issues that required treatment within school, while 30.1% (n=43) of the male students and 11.9% (n=34) of the female students stated it as "never" (p=.000).

Table 5.8: Distribution of students' responses to the school health services related questions by gender:

No.	Paragraph	sex	Always		Often		Sometimes		Very rarely		Never		Missing		P
			freq	%	freq	%	freq	%	freq	%	Freq	%	freq	%	
1.	You hold a health card at school	M F	13 3	9.1 12.6	5 5	3.5 1.7	10 9	7 3.1	4 11	2.8 3.8	111 214	77.6 74.8	0 11	0 3.8	.040*
2.	You are given vaccines at school	M F	23 219	16.1 76.6	23 18	16.1 6.3	37 24	25.9 8.4	24 8	16.8 2.8	36 17	25.2 5.9	0 0	0 0	.000
3.	Your hair hygiene is inspected regularly	M F	28 37	19.6 12.9	20 49	14 17.1	33 77	23.1 26.9	21 54	14.7 18.9	41 66	28.7 23.1	0 3	0 1	.181*
4.	In the case of suspicion of infection, the school administration calls for proffesional health assistance	M F	20 62	14 21.7	19 29	13.3 10.1	16 35	11.2 12.2	24 38	16.8 13.3	64 115	44.8 40.7	0 7	0 2.4	.122*
5.	In the case of emergencies,the student is assisted or transferred to hospital	M F	65 178	45.5 62.2	23 38	16.1 13.3	22 26	15.4 9.1	13 18	9.1 6.3	20 25	14 8.7	0 1	0 0.3	021*
6.	Dental examination is conducted during your school study	M F	22 93	15.4 32.5	20 30	14 10.5	36 49	25.2 17.1	23 40	16.1 14	42 74	29.4 25.9	0 0	0 0	.004
7.	Eyesight test is conducted during your school study	M F	21 93	14.7 32.6	19 34	13.3 11.9	31 52	21.7 18.2	32 44	22.4 15.4	40 62	28 21.8	0 0	0 0	.003
8.	The school has a clinic.	M F	12 23	8.5 8	7 12	4.9 4.2	8 9	5.6 3.1	16 21	11.3 7.3	99 219	69.7 76.6	0 2	0 0.7	.437*
9.	There is a doctor or a nurse at your school.	M F	4 8	2.8 2.8	3 7	2.1 2.4	2 6	1.4 2.1	10 6	7 2.1	123 256	86 89.5	1 3	0.7 1	.245*
10.	Your school is visited by a school health team	M F	9 54	6.3 18.9	13 42	9.1 14.7	30 59	21 20.7	32 56	22.4 19.6	59 72	41.3 25.3	0 2	0 0.7	.000*
11.	There is a first-aid kit at school.	M F	81 233	56.6 81.5	18 28	12.6 9.8	25 4	17.5 1.4	9 7	6.3 2.4	10 14	7 4.9	0 0	0 0	.000
12.	The students face health issues that require treatment within the school	M F	22 128	15.4 44.8	20 44	14 15.4	33 56	23.1 19.6	24 24	16.8 8.4	43 34	30.1 11.9	1 0	0.7 0	.000*

P values marked with (*) were derived using the Fisher exact test. All others were done using the Chi-square test

Finally, there was a statistically significant relationship between students' sex and their answers to school health environment related questions except four questions (q3, q6, q11, and q13) as shown in Table 5.9. In general, the responses of the girls were more positive than the boys .

For example, 79.9% (n=227) of the female students versus 39.9% (n=57) of the male students indicated that the school yard is "always" spacious, while 37.8% (n=54) of the male participants and only 6% (n=17) of the female participants stated it as "never" (p=.000). For the availability of green gardens, 83.9% (n=120) of the male students and 10.8% (n=31) of the female students indicated that the school "never" had a green garden, while 54.5% (n=156) of the female participants versus 0.7% (n=1) of the male participants reported it as "always" (p=000). Moreover, 85.3% (n=122) of the male students versus 77.6% (n=222) of the female students indicated that there was "never" a heating system at school, while 5.9% (n=17) of the female students versus 2.1% (n=3) of the male students stated it as "always". This result was not statistically significant(p=.209)

When addressing the topic of water, 65.4% (n=187) of the female students and 31.5% (n=45) of the males indicated that they "never" drank from the tap water at their schools, while 21% (n=30) of male participants and only 9.8% (n=28) of the female participants stated it as "always" (p=0.000). Furthermore, 45.5% (n=130) of the female participants versus 25.9% (n=36) of the male participants indicated that the drinking water's taste was "never" fine, while 25.9% (n=37) of the male students and 17.5% (n=50) of the female students stated it as "sometimes"(p=,001). In addition, 42.3% (n=121) of the female students versus16.1% (n=23) of the male students indicated that the toilets are "always" provided with water, while 35.7% (n=51) of the male participants and 20.6% (n=59) of the females reported it as "never" (p=.000)

For the compatibility of the classroom with the number of the students, 44.1% (n=63) of the male students and only 5.4% (n=170) of the females indicated that the classroom was “always" compatible to the number of the students, while 19.6% (n=28) of the male participants versus 16.8% (n=48) of the female participants stated it as "never" (p=.035). In addition, half of the female participants (51%,n=146) versus 42% (n=60) of the male participants indicated that the classrooms were "always" cleaned periodically, while 10.5%

(n=15) of the male students versus 4.2% (n=12) of the female students reported it as “never" (p=.003).

Moreover, 65.7% (n=188) of the female participants and 50.3% (n=72) of the male participants indicated that there was "always" appropriate lighting in the classroom, while 9.14% (n=13) of the male students and 4.5% (n=13) of the female students stated that as “never" (p=.024).

Finally, 46.9% (n=67) of the male students versus 28.8% (n=82) of the female students reported that their seats were "never" comfortable, while 35.1% (n=100) of the female participants versus 23.1% (n=33) of the male participants indicated that as "always" (p=.000).

Table 5.9a : Distribution of students' responses to school health environment related questions by gender :

No.	Paragraph	sex	Always		Often		Sometimes		Very rarely		Never		Missing		P
			freq	%	freq	%	freq	%	freq	%	freq	%	freq	%	
1.	There is a rubbish bin in the school yard	M F	95 245	66.4 85.7	13 24	9.1 8.4	20 8	14 2.8	6 5	4.2 1.7	9 4	6.3 1.4	0 0	0 0	.000*
2.	The school yard is spacious	M F	57 227	39.9 79.9	16 21	11.2 7.4	11 7	7.7 2.5	5 10	3.5 3.5	54 17	37.8 6	0 2	0 0.7	.000*
3.	The school yard is clean	M F	25 42	17.5 14.7	29 66	20.3 23.1	33 86	23.1 30.1	22 44	15.4 15.4	32 46	22.4 16.1	2 2	1.4 0.7	.414*
4.	The school has a green garden.	M F	1 156	0.7 54.5	4 39	2.8 13.6	7 28	4.9 9.8	11 32	7.7 11.2	120 31	83.9 10.8	0 0	0 0	.000
5.	There are air conditioning units at school	M F	3 32	2.1 11.2	2 11	1.4 3.8	7 15	4.9 5.2	14 22	9.8 7.7	117 205	81.8 71.7	0 1	0 0.3	.010*
6.	There are heating systems at school	M F	3 17	2.1 5.9	3 10	2.1 3.5	3 13	2.1 4.5	12 24	8.4 8.4	122 222	85.3 77.6	0 0	0 0	.209*
7.	There are appropriate sinks at school	M F	20 80	14 28	14 48	9.8 16.8	30 42	21 14.7	28 37	19.6 12.9	51 77	35.7 26.9	0 2	0 0.7	.001*
8.	Drinking water is accessible at school	M F	30 102	21 35.7	27 51	18.9 17.8	43 60	30.1 21	25 25	17.5 8.7	17 47	11.9 16.4	1 1	0.7 0.3	.002*
9.	You drink from the tap water at school	M F	30 28	21 9.8	14 15	9.8 5.2	34 26	23.8 9.1	20 30	14 10.5	45 187	31.5 65.4	0 0	0 0	.000
10.	The drinking water's taste at school is fine	M F	25 41	17.5 14.3	26 30	18.2 10.5	37 50	25.9 17.5	15 30	10.5 10.5	36 130	25.1 45.5	4 5	2.8 1.7	.001*
11.	The drinking water at school is smelly	M F	14 47	9.8 16.4	11 25	7.7 8.7	28 39	19.6 13.6	21 40	14.7 14	68 131	47.6 45.8	1 4	0.7 1.4	.343*
12.	The toilets at school are provided with water	M F	23 121	16.1 42.3	20 45	14 15.7	28 35	19.6 12.2	20 25	14 8.7	51 59	35.7 20.6	1 1	0.7 0.3	.000*
13.	The school toilets are clean	M F	9 10	6.3 3.5	12 24	8.4 8.4	26 53	18.2 18.5	28 57	19.6 19.9	66 141	46.2 49.3	2 1	1.4 0.3	.652*
14.	The space of the classroom is compatable with the number of students	M F	63 170	44.1 5.4	25 36	17.5 12.6	18 22	12.6 7.7	9 10	6.3 3.5	28 48	19.6 16.8	0 0	0 0	.035

Table 5.9 b

No.	Paragraph	sex	Always		Often		Sometimes		Very rarely		Never		Missing		P
			freq	%	freq	%	freq	%	freq	%	freq	%	freq	%	
15.	There are windows in the classroom	M F	117 275	81.8 96.2	9 6	6.3 2.1	7 2	4.90 .7	4 0	2.8 0	6 3	4.2 1	0 0	0 0	.000*
16.	There are bars on the windows in the classroom.	M F	125 272	87.4 95.1	8 7	5.6 2.4	4 0	2.8 0	1 0	0.7 0	5 7	3.5 2.4	0 0	0 0	.004*
17.	The classroom gets enough ventilation through the window	M F	79 195	55.2 68.2	29 26	20.3 9.1	21 35	14.7 12.2	3 4	2.1 1.4	11 26	7.7 9.1	0 0	0 0	.010*
18.	There is a rubbish bin in the classroom	M F	99 266	69.2 93	20 7	14 2.4	15 6	10.5 2.1	5 3	3.5 1	4 4	2.8 1.4	0 0	0 0	.000*
19.	Classrooms are cleaned periodically	M F	60 146	42 51	14 51	9.8 17.8	32 46	22.4 16.1	21 31	14.7 10.8	15 12	10.5 4.2	1 0	0.7 0	.003
20.	There is appropriate lighting in the classroom	M F	72 188	50.3 65.7	28 37	19.6 12.9	23 33	16.1 11.5	7 15	4.9 5.2	13 13	9.14 4.5	0 0	0 0	.024
	Your seat is comfortable	M F	33 100	23.1 35.1	13 48	9.1 16.8	16 39	11.2 13.7	14 16	9.8 5.6	67 82	46.9 28.8	0 0	0 0	.000

P values marked with (*) were derived using the Fisher exact test. All others were done using the Chi-square test.

The Chi–square and Fisher exact tests were used to examine the relationship between students' schools and students' responses to the SHP related questions. For the heath education and promotion, the chi-square and fisher exact tests revealed a significant difference for all questions as shown in Table 5.10. In general, females' schools tended to answer "always or often" more than males' schools who tended to answer "rarely or never", especially Sayeda Sara school for girls and Yosry Natsheh school for boys .

For example: 87.4% (n=125) of the students' of al Sayeda Sara school versus 21.3% (n=27) of the students' of Abu Hanak school indicated that that there is "always" a health committee at school, while 25% (n=4) of Yosry Natsheh school's students versus 21.3% (n=27) of Abu Hanak schools' students stated it as "never" (p=.000). In addition, 62.9% (n=90) of al Sayeda Sara school and 61.6% (n=61) of Abu Daba'at school indicated that they are "always" aware of the importance of school hygienic facilities. However, 25% (n=4) of Yosry Natsheh school's students and 13.4% (n=17) of those of Abu Hanak school stated that as "never" (p=.000). Also, 50% (n= 8) of the students of Yosry Natsheh school and 24.4% (n=31) of the students of Abu Hanak school indicated that bulletin boards with environment and hygienic awareness material were "never" posted at school, while 44.1% (n=63) of the students' of Alsayeda Sara school and 29.5% (n=13) of the students of Gernata school stated it as "always" (p=.000).

Likewise, 52.3% (n=23) of the students of Gernata school and 40.6% (n=58) of the students of al Sayeda Sara school indicated that their personal hygiene was "always" inspected regularly at school, while 17.3 % (n=22) of Abu Hanak schools' students and 11.2% (n=16) of al Sayeda Sara schools' students reported it as "rarely"(p=.043). Moreover, 56.3% (n=9) of the students of al Natsheh school and 40.9% (n=18) of the students of Gernata school reported that they were "never" aware of the importance of checking the expiry date of the food items. However, 24.5 % (n=35) of the students of Alsayeda Sara school indicated it as "always" (p=.017).

Finally, 46.5% (n=59) of the students of Abu Hanak school and 25% (n=4) of the students of Yosry Natsheh school indicated that the awareness publication was "never" disseminated at the school, and 39.9% (n=57) of the students of Alsayeda Sara school stated it as "always" (p=.000).

Table 5.10 a : Distribution of students' responses to health education and promotion related questions by students' school :

No.	Paragraph	School	Always		Often		Sometimes		Very rarely		Never		Missing		P
			freq	%	freq	%	freq	%	freq	%	Freq	%	freq	%	
1.	There is a Health Committee at school	1 2 3 4 5	125 16 57 27 4	87.4 36.4 57.6 21.3 25	12 10 27 17 3	8.4 22.7 27.3 13.4 18.8	3 7 13 35 1	2.1 15.9 13.1 27.6 6.3	2 5 2 21 4	1.4 11.4 2 16.5 25	1 5 0 27 4	0.7 11.4 0 21.3 25	0 1 0 0 0	0 2.3 0 0 0	.000*
2.	You are made aware of the importance of the school hygienic facilities	1 2 3 4 5	90 8 61 34 2	62.9 18.2 61.6 26.8 12.5	30 10 28 26 2	21 22.7 28.3 20.5 12.5	17 11 5 28 7	11.9 25 5.1 22 43.8	3 8 3 22 1	2.1 18.2 3 17.3 6.3	3 7 2 17 4	2.1 15.9 2 13.4 25	0 0 0 0 0	0 0 0 0 0	.000*
3.	Bulletin boards with enviroment and hygienic awareness material posted at school	1 2 3 4 5	63 13 13 20 1	44.1 29.5 13.1 15.7 6.3	23 9 29 20 2	16.1 20.5 29.3 15.7 12.5	39 13 33 30 1	27.3 29.5 33.3 23.6 6.3	11 4 15 26 4	7.7 9.1 15.2 20.5 25	7 5 8 31 8	4.9 11.4 8.1 24.4 50	0 0 1 0 0	0 0 1 0 0	.000*
4.	Health information is brodcasted through the school radio	1 2 3 4 5	78 9 41 20 0	54.5 20.5 41.4 15.7 0	27 15 22 36 5	18.9 34.1 22.2 28.3 31.3	32 13 28 31 5	22.4 29.5 28.3 24.4 31.3	6 5 5 26 6	4.2 11.4 5.1 20.5 37.5	0 2 2 14 0	0 4.5 2 11 0	0 0 1 0 0	0 0 1 0 0	.000*
5.	Competitions are organised at school	1 2 3 4 5	18 2 11 6 0	12.6 4.5 11.1 4.7 0	32 2 20 17 1	22.4 4.5 20.2 13.4 6.3	45 12 26 33 0	31.5 27.3 26.3 26 0	25 11 18 34 5	17.5 25 18.2 26.8 31.3	23 16 24 36 10	16.1 36.4 24.2 28.3 62.5	0 1 0 1 0	0 2.3 0 0.8 0	.000*
6.	You are involved in voluntary activities	1 2 3 4 5	51 15 25 20 4	35.7 34.1 25.3 15.7 25	23 15 21 26 4	16.1 34.1 21.2 20.5 25	34 5 18 22 3	23.8 11.4 18.2 17.3 18.8	16 2 10 16 3	11.2 4.5 10.1 12.6 18.8	18 7 25 43 2	12.6 15.9 25.3 33.9 12.5	1 0 0 0 0	0.7 0 0 0 0	.001*
7.	Your personal hygiene is inspected regulary at school	1 2 3 4 5	58 23 28 39 2	40.6 52.3 28.3 30.7 12.5	23 6 23 25 9	16.1 13.6 23.2 19.7 56.3	32 10 22 30 3	22.4 22.7 22.2 23.6 18.8	16 2 11 22 1	11.2 4.5 11.1 17.3 6.3	14 3 14 11 1	9.8 6.8 14.1 8.7 6.3	0 0 1 0 0	0 0 1 0	.043*
8.	You are aware of the importance of personal hygiene	1 2 3 4 5	86 12 41 34 5	60.1 27.3 41.4 26.8 31.3	29 16 30 26 2	20.3 36.4 30.3 20.5 12.5	19 10 19 37 5	13.3 22.7 19.2 29.1 31.3	4 5 7 18 2	2.8 11.4 7.1 14.2 12.5	4 0 2 11 2	2.8 0 2 8.7 12.5	1 1 0 1 0	0.7 2.3 0 0.8 0	.000*

Table 5.10 b

No.	Paragraph	School	Always		Often		Sometimes		Very rarely		Never		Missing		P
			freq	%	freq	%	freq	%	freq	%	freq	%	freq	%	
9.	You are made aware of the importance of checking expiry dates	1 2 3 4 5	35 6 12 12 2	24.5 13.6 12.1 9.4 12.5	28 5 18 17 0	19.6 11.4 18.2 13.4 0	23 9 23 20 4	16.1 20.5 23.2 15.7 25	21 6 18 29 1	14.7 13.6 18.2 22.8 6.3	36 18 28 47 9	25.2 40.9 28.3 37 56.3	0 0 0 2 0	0 0 0 1.6 0	.017
10.	Awareness publications are being disseminated	1 2 3 4 5	57 5 9 6 0	39.9 11.4 9.1 4.7 0	23 6 20 9 0	16.1 13.6 20.2 7.1 0	37 12 21 18 4	25.9 27.3 21.2 14.2 25	13 13 24 35 8	9.1 29.5 24.2 27.6 50	13 8 24 59 4	9.1 18.2 24.2 46.5 25	0 0 1 0 0	0 0 1 0 0	.000*

.1=Sayeda Sara - 2=Gernata - 3=Abu Daba'at - 4=Abu Hanak - 5=Yosry Natsheh .

P values marked with (*) were derived using the Fisher exact test. All others were done using the Chi-square test.

As shown in Table 5.11 below, there was a statistically significant relationship between the students' school and the school nutrition related questions, except three questions (q1,q2,q4) which were not significant.

For example, 37.5% (n=6) of Yosry Natsheh schools' students and 22.4% (n=32) of al Sayeda Sara schools' students indicated that they "always" check the expiry date printed on food items which are being sold in the school canteen, versus 25% (n=11) of the students of Gernata school and 22% (n=28) of the students of Abu Hanak school who reported it as "never" (p=.119). Moreover, 45.5% (n=20) of the students of Gernata school and 38.5% (n=31) of the students of Sayeda Sara school indicated that information about importance of nutrition is "sometimes" being broadcasted through school radio, while 29.9% (n=38) of the students of Abu Hanak school and 9.1% (n=4) of the students of Gernata school stated it as "never" (p=.000). Also, 88.8% (n=88) of the participants of Abu Daba'at school versus 65.7% (n=94) of the participants of Yosry Natsheh school reported that their schools "never" distribute free nutritious food items. However, 7% (n=10) of Alsayeda Sara schools' students indicated it as "sometimes" (p=.002). In regard to the canteen workers, 49% (n=70) of Sayeda Sara schools' students and 43.2% (n=19) of Gernata schools' students indicated that the canteen workers were "always" cautious about their personal hygiene while 29.1% (n=37) of the students of Abu Hanak school and 17.2% (n=17) of the students of Abu Daba'at school stated it as "never" (p=.000). In addition, 85.3% (n=122) of the students of Alsayeda Sara school and 75% (n=33) of Gernata schools' students indicated that the canteen "always" had a refrigerator, while 81.3% (n=13) of the students of Yosry Natsheh school stated it as "never" (p=.000).

Finally, 97.7% (n=43) of the students of Gernata school, 97% (n=96) of Abu Daba'at schools' students and 96.5% (n=138) of Sayeda Sara schools' students stated that chips and chocolate were "always" sold in the canteen, while 62.5% (n=10) of Yosry Natsheh schools' students indicated it as "never" (p=.000).

Table 5.11 : Distribution of students' responses to the school nutrition related questions by students' school

No.	Paragraph	School	Always		Often		Sometimes		Very rarely		Never		Missing		P
			freq	%	freq	%	freq	%	freq	%	freq	%	freq	%	
1.	You check the expiry date printed on food items being sold in school canteen	1	32	22.4	25	17.5	34	23.8	29	20.3	23	16.1	0	0	.119*
		2	6	13.6	10	22.7	9	20.5	8	18.2	11	25	0	0	
		3	23	23.2	20	20.2	27	27.3	9	9.1	20	20.2	0	0	
		4	32	25.2	14	11	40	31.5	13	10.2	28	22	0	0	
		5	6	37.5	3	18.8	5	31.3	0	0	2	12.5	0	0	
2.	There are healthy foods and drinks in school canteen	1	33	23.1	21	14.7	20	14	16	11.2	53	37.1	0	0	.176*
		2	14	31.8	5	11.4	4	9.1	7	15.9	14	31.8	0	0	
		3	29	29.3	19	19.2	10	10.1	12	12.1	28	28.3	1	1	
		4	26	20.5	12	9.4	28	22	15	11.8	46	36.2	0	0	
		5	1	6.3	4	25	4	25	2	12.5	5	31.3	0	0	
3.	Information about importance of nutrition is being brodcasted through school radio	1	38	26.6	27	18.9	55	38.5	13	9.1	10	7	0	0	.000*
		2	3	6.8	6	13.6	20	45.5	11	25	4	9.1	0	0	
		3	14	14.1	23	23.2	38	38.4	15	15.2	8	8.1	1	1	
		4	9	7.1	18	14.2	31	24.4	30	23.6	38	29.9	1	0.8	
		5	0	0	0	0	5	31.3	10	62.5	1	6.3	0	0	
4.	The school distributes free nutritious food items	1	3	2.1	2	1.4	10	7	33	23.1	94	65.7	1	0.7	.002*
		2	0	0	1	2.3	1	2.3	9	20.5	33	75	0	0	
		3	1	1	2	2	1	1	7	7.1	88	88.9	0	0	
		4	0	0	5	3.9	6	4.7	10	7.9	106	83.5	0	0	
		5	0	0	1	6.3	0	0	1	6.3	14	87.5	0	0	
5.	Workers in the canteen are cautious about their personal hygiene	1	70	49	22	15.4	26	18.2	13	9.1	11	7.7	1	0.7	.000*
		2	19	43.2	5	11.4	7	15.9	4	9.1	7	15.9	2	4.5	
		3	23	23.2	19	19.2	23	23.2	15	15.2	17	17.2	2	2	
		4	12	9.4	22	17.3	26	20.5	29	22.8	37	29.1	1	0.8	
		5	3	18.8	4	25	3	18.8	5	31.3	1	6.3	0	0	
6.	Food is kept covered and in a clean environment	1	47	32.9	30	21	28	19.6	12	8.4	26	18.2	0	0	.000*
		2	11	25	7	15.9	9	20.5	3	6.8	13	29.5	1	2.3	
		3	21	21.2	17	17.2	18	18.2	19	19.2	23	23.2	1	1	
		4	14	11	13	10.2	28	22	20	15.7	52	40.9	0	0	
		5	3	18.8	2	12.5	2	12.5	4	25	5	31.3	0	0	
7.	The canteen has a refrigerator	1	122	85.3	6	4.2	6	4.2	2	1.4	7	4.9	0	0	.000*
		2	33	75	3	6.8	3	6.8	0	0	3	6.8	2	4.5	
		3	50	50.5	12	12.1	8	8.1	7	7.1	20	20.2	2	2	
		4	71	55.9	17	13.4	15	11.8	11	8.7	13	10.2	0	0	
		5	2	12.5	0	0	0	0	1	6.3	13	81.3	0	0	
8.	chips, chocolate are being sold in the canteen	1	138	96.5	2	1.4	1	0.7	2	1.4	0	0	0	0	.000*
		2	43	97.7	0	0	1	2.3	0	0	0	0	0	0	
		3	96	97	1	1	0	0	1	1	1	1	0	0	
		4	99	78	14	11	7	5.5	3	2.4	4	3.1	0	0	
		5	2	12.5	2	12.5	1	6.3	1	6.3	10	62.5	0	0	

1=Sayeda Sara - 2=Gernata - 3=Abu Daba'at - 4=Abu Hanak - 5=Yosry Natsheh.
P values marked with (*) were derived using the Fisher exact test. All others were done using the Chi-square test.

For school health, the chi-square and fisher exact tests revealed a significant relation for all questions except four questions (q3,q5,q8,q9). On the contrary to the previous results, the boys' schools tended to answer "always or often" more than girls' schools which tended to answer "never or rarely" as shown in Table 5.12.

For example, 81.8% (n=36) of the students of Gernata school and 80.8% (n=80) of Abu Daba'at schools' students indicated that they "never" held health cards at school, while 18.2% (n=26) of Sayeda Sara schools' students and 10.2% (n=13) of the students of Abu Hanak school stated it as "always"(p=.002). In addition, 26.8% (n=34) of Abu Hanak schools' students and 18.8% (n=3) of Yosry Natsheh schools' students indicated that they were "sometimes" given vaccines at school, while 31.3% (n=5) of the students of Yosry Natsheh school and 24.4% (n=31) of the students of Abu Hanak school indicated that as " never" .

In regard to suspicion of infection, 62.5% (n=10) of Yosry Natsheh school's students and 54.5% (n=54) of Abu Daba'at schools' students stated that in the case of suspicion of infection, the school administration "never" called for professional health assistance, while 31.5% (n=45) of Alsayeda Sara school's students and 25% (n=11) of Gernata schools' students indicated that as "always" (p=.000).

Moreover, 68.8% (n=11) of Yosry Natsheh school's students and 45.5% (n=20) of Gernata school's students stated that dental examinations were "never" conducted during their school years, while 65.7% (n=65) of Abu Daba'at schools' students and 18.9% (n=27) of Sayeda Sara schools' students indicated it as "always"(p=.000).

On the topic of visitation by a school health team, 62.5% (n=10) of Yosry Natsheh school's students and 45.5% (n=20) of Gernata school's students indicated that their schools were "never" visited by a school health team, and 21.4% (n=21) of Abu Daba'at schools' students and 20.3% (n=29) of Sayeda Sara schools' students reported it as "always"(p=.000).

Furthermore, 83.9% (n=120) of the students of Sayeda Sara school and 81.8% (n=81) of the students of Abu Daba'at school indicated that there was "always" a first-aid kit at their schools,

while 18.8% (n=1) of Yosry Natsheh schools' students and 11.8% (n=9) of Abu Hanak schools' students stated it as "never"(p=.000) .

Finally, 49.7% (n=71) of the students of Sayeda Sara school and 44.4% (n=44) of the students of Abu Daba'at school stated that students "always" face health issues that require treatment within the school, while 37.5% (n=6) of the students of Yosry Natsheh school and 29.1% (n=37)of the students of Abu Hanak school indicated it as "never"(p=.000)

Table 5.12 a : Distribution of the students' responses to school health service related questions by students' schools:

No.	Paragraph	school	Always		Often		Sometimes		Very rarely		Never		Missing		P
			freq	%	freq	%	freq	%	freq	%	freq	%	freq	%	
1.	You hold a health card at school	1 2 3 4 5	26 1 9 13 0	18.2 2.3 9.1 10.2 0	2 0 3 4 1	1.4 0 3 3.1 6.3	7 1 1 8 2	4.9 2.3 1 6.3 12.5	8 2 1 4 0	5.6 4.5 1 3.1 0	98 36 80 98 13	68.5 81.8 80.8 77.2 81.3	2 4 5 0 0	1.4 9.1 5.1 0 0	.002*
2.	You are given vaccines at school	1 2 3 4 5	109 38 72 20 3	76.2 86.4 72.7 15.7 18.8	7 4 7 21 2	4.9 9.1 7.1 16.5 12.5	15 1 8 34 3	10.5 2.3 8.1 26.8 18.8	5 0 3 21 3	3.5 0 3 16.5 18.8	7 1 9 31 5	4.9 2.3 9.1 24.4 31.3	0 0 0 0 0	0 0 0 0 0	.000*
3.	Your hair hygiene is inspected at school	1 2 3 4 5	26 4 7 25 3	18.2 9.1 7.1 19.7 18.8	24 8 17 15 5	16.8 18.2 17.2 11.8 31.3	38 13 26 30 3	26.6 29.5 26.3 23.6 18.8	24 10 20 17 4	16.8 22.7 20.2 13.4 25	31 9 26 40 1	21.7 20.5 26.3 31.5 6.3	0 0 3 0 0	0 0 3 0 0	.066*
4.	In the case of suspicion of infection, the school administration calls for professional health assistance	1 2 3 4 5	45 11 6 18 2	31.5 25 6.1 14.2 12.5	17 4 8 19 0	11.9 9.1 8.1 15 0	22 3 10 15 1	15.4 6.8 10.1 11.8 6.3	15 5 18 21 3	10.5 11.4 18.2 16.5 18.8	44 17 54 54 10	30.8 38.6 54.5 42.5 62.5	0 4 3 0 0	0 9.1 3 0 0	.000*
5.	In the case of emergencies such as student injuries at school ,the student is assisted or transferred to hospital	1 2 3 4 5	84 34 60 58 7	58.7 77.3 60.6 45.7 43.8	19 3 16 20 3	13.3 6.8 16.2 15.7 18.8	15 2 9 20 2	10.5 4.5 9.1 15.7 12.5	8 2 8 11 2	5.6 4.5 8.1 8.7 12.5	17 3 5 18 2	11.9 6.8 5.1 14.2 12.5	0 0 1 0 0	0 0 1 0 0	.126*
6.	Dental examination is conducted during student's school years	1 2 3 4 5	27 1 65 22 0	18.9 2.3 65.7 17.3 0	11 5 14 19 1	7.7 11.4 14.1 15 6.3	24 11 14 35 1	16.8 25 14.1 27.6 6.3	27 7 6 20 3	18.9 15.9 6.1 15.7 18.8	54 20 0 31 11	37.8 45.5 0 24.4 68.8	0 0 0 0 0	0 0 0 0 0	.000*
7.	Eyesight test is conducted	1 2 3 4 5	28 4 61 21 0	19.6 9.1 62.2 16.5 0	11 7 16 19 0	7.7 15.9 16.3 15 0	26 12 14 30 1	18.2 27.3 14.3 23.6 6.3	33 6 5 30 2	23.1 13.6 5.1 23.6 12.5	45 15 2 27 13	31.5 34.1 2 21.3 81.3	0 0 0 0 0	0 0 0 0 0	.000*

Table 5.12 b

No.	Paragraph	school	Always		Often		Sometimes		Very rarely		Never		Missing		P
			freq	%	freq	%	freq	%	freq	%	freq	%	freq	%	
8.	The school has a clinic.	1 2 3 4 5	14 2 7 12 0	9.8 4.5 7.1 9.5 0	6 1 5 7 0	4.2 2.3 5.1 5.6 0	4 2 3 7 1	2.8 4.5 3 5.6 6.3	12 1 8 16 0	8.4 2.3 8.1 12.7 0	106 38 75 84 15	74.1 86.4 75.8 66.7 93.8	1 0 1 0 0	0.7 0 1 0 0	.701*
9.	There is a doctor or a nurse at school.	1 2 3 4 5	7 0 1 4 0	4.9 0 1 3.1 0	5 0 2 3 0	3.5 0 2 2.4 0	2 0 4 2 0	1.4 0 4 1.6 0	3 1 2 10 0	2.1 2.3 2 7.9 0	126 42 88 108 15	88.1 95.5 88.9 85 93.8	0 1 2 0 1	0 2.3 2 0 6.3	.166*
10.	The school is visited by school health team	1 2 3 4 5	29 4 21 9 0	20.3 9.1 21.4 7.1 0	21 3 18 12 1	14.7 6.8 18.4 9.4 6.3	32 7 20 27 3	22.4 15.9 20.4 21.3 18.8	24 9 23 30 2	16.8 20.5 23.5 23.6 12.5	37 20 15 49 10	25.9 45.5 15.3 38.6 62.5	0 1 1 0 0	0 2.3 1 0 0	.000*
11.	There is a first-aid kit at school.	1 2 3 4 5	120 32 81 74 7	83.9 72.7 81.8 58.3 43.8	15 5 8 15 3	10.5 11.4 8.1 11.8 18.8	1 1 2 23 2	0.7 2.3 2 18.1 12.5	3 1 3 6 3	2.1 2.3 3 4.7 18.8	4 5 5 9 1	2.8 11.4 8.1 11.8 18.8	0 0 0 0 0	0 0 0 0 0	.000*
12.	Did You or any of the students face health issues that required treatment within the school	1 2 3 4 5	71 13 44 20 2	49.7 29.5 44.4 15.7 12.5	20 7 17 20 0	14 15.9 17.2 15.7 0	22 15 19 29 4	15.4 34.1 19.2 22.8 25	10 4 10 20 4	7 9.1 10.1 15.7 25	20 5 9 37 6	14 11.4 9.1 29.1 37.5	0 0 0 1 0	0 0 0 0.8 0	.000*

1=Sayeda Sara -.2=Gernata -.3=Abu Daba'at- .4=Abu Hanak- 5=Yosry Natsheh

P values marked with (*) were derived using the Fisher exact test. All others were done using the Chi-square test.

Finally, there was a statistically significant relationship between the students' school and the school health environment related questions except three questions (q6,q11,q13), and the girls' schools answered were more positively (Sayeda Sara school and Gernata school) than the boys' schools (Yosry Natsheh) as shown in Table 5.13.

For example, 43% (n=7) of the students of Yosry Natsheh school and 35.4% (n=35) of the students of Abu Daba'at school indicated that the school yard was "never" cleaned, while 34.1% (n=15) of the students of Gernata school and 30.1% (n=43) of Sayeda Sara schools' students stated that as "often"(p=.000). Moreover, 100% (n=16) of the students of Yosry Natsheh school and 81.9% (n=104) of the students of Abu Hanak school indicated that their school " never" had a green garden.

In addition, 51.7% (n=74) of the students of Alsayeda Sara school and 43.2% (n=19) of the students of Gernata school stated that the drinking water was "always" accessible at school, while 19.2% (n=19) of the students of Abu Daba'at school and 15.9% (n=7) of the students of Gernata school answered that as "never" (p=.000). Also, 74.1% (n=107) of the students of Alsayeda Sara school and 58.6% (n=58) of the students of Abu Daba'at school indicated that they "never" drank from the tap water at their schools, while 25% (n=4) of Yosry Natsheh school and 20.5% (n=26) of Abu Hanak schools' students reported it as "always" (p=.000). Moreover, 48.3% (n=69) of the students of Sayeda Sara school and 43.4% (n=43) of the students of Abu Daba'at school indicated that the drinking water's taste was "never" fine, while 25% (n=4) of the students of Yosry Natsheh school and 20.5% (n=26) of the students of Abu Hanak school reported that as "always"(p=.022).

56.3% (n=9) of the students of Yosry Natsheh school and 33.1% (n=42) of the students of Abu Hanak school reported that toilets at school were "never" provided with water. However, 53.1% (n=76) of the students of Sayeda Sara school and 34.1% (n=15) of the students of Gernata school indicated that as "always" (p=.000). Moreover, 75% (n=12) of the students of Yosry Natsheh school and 66.4% (n=8) of Alsayeda Sara school indicated that the space of the classroom was "always" compatible to the number of students (p=.000).

For the cleanliness of the classroom, 65.7% (n=94) of the students of Sayeda Sara school and 50% (n=22) of the students of Gernata school indicated that the classroom was "always" cleaned periodically, while 43.8% (n=7) of Yosry Natsheh schools' students stated that as "never"(p=.000).

Finally, 75.5% (n=108) of Sayeda Sara schools' students and 61.6% (n=61) of Abu Daba'at schools' students indicated that there is "always" appropriate lighting in the classroom, while 50% (n=8) of the students of Yosry Natsheh school stated that as "never"(p=.000).

Table 5.13a: Distribution of students' responses to school health environment related questions by students' school:

No.	Paragraph	school	Always		Often		Sometimes		Very rarely		Never		Missing		P
			freq	%	freq	%	freq	%	freq	%	freq	%	freq	%	
1.	There is a rubbish bin in the school yard	1	121	84.6	12	8.4	5	3.5	3	2.1	2	1.4	0	0	.000*
		2	40	90.9	4	9.1	0	0	0	0	0	0	0	0	
		3	84	84.8	8	8.1	3	3	2	2	0	0	0	0	
		4	92	72.4	10	7.9	16	12.6	3	2.4	6	4.7	0	0	
		5	3	18.8	3	18.8	4	25	3	18.8	3	18.8	0	0	
2.	The school yard is spacious	1	135	94.4	4	2.8	2	1.4	2	1.4	0	0	0	0	.000*
		2	17	38.6	9	20.5	2	4.5	4	9.1	10	22.7	2	4.5	
		3	75	77.3	8	8.2	3	3.1	4	4.1	7	7.2	0	0	
		4	56	44.1	16	12.6	11	8.7	4	3.1	40	31.5	0	0	
		5	1	6.3	0	0	0	0	1	6.3	14	87.5	0	0	
3.	The school yard is clean	1	31	21.7	43	30.1	48	33.6	15	10.5	6	4.2	0	0	.000*
		2	8	18.2	15	34.1	9	20.5	5	11.4	5	11.4	2	4.5	
		3	3	3	8	8.1	29	29.3	24	24.2	35	35.4	0	0	
		4	23	18.1	25	19.7	32	25.2	20	15.7	25	19.7	2	1.6	
		5	2	12.5	4	25	1	6.3	2	12.5	7	43.8	0	0	
4.	The school has a green garden.	1	102	71.3	18	12.6	6	4.2	8	5.6	9	6.3	0	0	.000*
		2	19	43.2	6	13.6	4	9.1	9	20.5	6	13.6	0	0	
		3	35	35.4	15	15.2	18	18.2	15	15.2	16	16.2	0	0	
		4	1	0.8	4	3.1	7	5.5	11	8.7	104	81.9	0	0	
		5	0	0	0	0	0	0	0	0	16	100	0	0	
5.	There are air conditioning units at school	1	15	10.5	4	2.8	2	1.4	12	8.4	110	76.9	0	0	.000*
		2	17	38.6	4	9.1	7	15.9	4	9.1	12	27.3	0	0	
		3	0	0	3	3	6	6.1	6	6.1	83	83.8	1	1	
		4	3	2.4	2	1.6	6	4.7	13	10.2	103	81.1	0	0	
		5	0	0	0	0	1	6.3	1	6.3	14	87.5	0	0	
6.	There are heating systems at school	1	12	8.4	4	2.8	7	4.9	14	9.8	106	74.1	0	0	.085*
		2	3	6.8	0	0	4	9.1	5	11.4	32	72.7	0	0	
		3	2	2	6	6.1	2	2	5	5.1	84	84.8	0	0	
		4	3	2.4	3	2.4	2	1.6	10	7.9	109	85.8	0	0	
		5	0	0	0	0	1	6.3	2	12.5	13	81.3	0	0	
7.	There are appropriate sinks at school	1	54	37.8	23	16.1	18	12.6	13	9.1	35	24.5	0	0	.000*
		2	10	22.7	9	20.5	5	11.4	8	18.2	12	27.3	0	0	
		3	16	16.2	16	16.2	19	19.2	16	16.2	30	30.3	2	2	
		4	17	13.4	14	11	29	22.8	23	18.1	44	34.6	0	0	
		5	3	18.8	0	0	1	6.3	5	31.3	7	43.8	0	0	
8.	Drinking water is accessible at school	1	74	51.7	15	10.5	22	15.4	10	7	21	14.7	1	0.7	.000*
		2	19	43.2	12	27.3	6	13.6	0	0	7	15.9	0	0	
		3	9	9.1	24	24.2	32	32.3	15	15.2	19	19.2	0	0	
		4	26	20.5	23	18.1	39	30.7	22	17.3	16	12.6	1	0.8	
		5	4	25	4	25	4	25	3	18.8	1	6.3	0	0	

Table 5.13 b

No.	Paragraph	school	Always		Often		sometimes		Very rarely		Never		Missing		P
			freq	%	freq	%	freq	%	freq	%	freq	%	freq	%	
9.	You drink from the tap water at school	1 2 3 4 5	10 6 12 26 4	7 13.6 12.1 20.5 25	5 4 6 11 3	3.5 9.1 6.1 8.7 18.8	9 4 13 30 4	6.3 9.1 13.1 23.6 25	13 7 10 17 3	9.1 15.9 10.1 13.4 18.8	106 23 58 43 2	74.1 52.3 58.6 33.9 12.5	0 0 0 0 0	0 0 0 0 0	.000*
10.	The drinking water's taste at school is fine	1 2 3 4 5	25 5 11 23 2	17.5 11.4 11.1 18.1 12.5	9 9 12 23 3	6.3 20.5 12.1 18.1 18.8	26 7 17 31 6	18.2 15.9 17.2 24.4 37.5	13 4 13 14 1	9.1 9.1 13.1 11 6.3	69 18 43 32 4	48.3 40.9 43.4 25.2 25	1 1 3 4 0	0.7 2.3 3 3.1 0	.022*
11.	The drinking water at school is smelly	1 2 3 4 5	28 8 11 11 3	19.6 18.2 11.1 8.7 18.8	13 2 10 8 3	9.1 4.5 10.1 6.3 18.8	20 5 14 26 2	14 11.4 14.1 20.5 12.5	16 6 18 18 3	11.2 13.6 18.2 14.2 18.8	66 21 44 63 5	46.2 47.7 44.4 49.6 31.3	0 2 2 1 0	0 4.5 2 0.8 0	.204*
12.	Toilets at school are provided with water	1 2 3 4 5	76 15 30 22 1	53.1 34.1 30.3 17.3 6.3	10 8 27 19 1	7 18.2 27.3 15 6.3	19 4 12 25 3	13.3 9.1 12.1 19.7 18.8	9 6 10 18 2	6.3 13.6 10.1 14.2 12.5	29 11 19 42 9	20.3 25 19.2 33.1 56.3	0 0 1 1 0	0 0 1 0.8 0	.000*
13.	The school toilets are clean	1 2 3 4 5	8 1 1 8 1	5.6 2.3 1 6.3 6.3	13 3 8 11 1	9.1 6.8 8.1 8.7 6.3	28 12 13 25 1	19.6 27.3 13.1 19.7 6.3	30 9 18 25 3	21 20.5 18.2 19.7 18.8	64 19 58 56 10	44.8 43.2 58.6 44.1 62.5	0 0 1 2 0	0 0 1 1.6 0	596*
14.	The space of the classroom is compatable to the number of students.	1 2 3 4 5	95 8 67 51 12	66.4 18.2 67.7 40.2 75	25 2 9 24 1	17.5 4.5 9.1 18.9 6.3	11 0 11 16 2	7.7 0 11.1 12.6 12.5	3 4 3 9 0	2.1 9.1 3 7.1 0	9 30 9 27 1	6.3 68.2 9.1 21.3 6.3	0 0 0 0 0	0 0 0 0 0	.000*
15.	There are windows in the classroom	1 2 3 4 5	140 40 95 103 14	97.9 90.9 96 81.1 87.5	2 2 2 9 0	1.4 4.5 2 7.1 0	0 2 0 7 0	0 4.5 0 5.5 0	0 0 0 3 1	0 0 0 2.4 6.3	1 0 2 5 1	0.7 0 2 3.9 6.3	0 0 0 0 0	0 0 0 0 0	.001*
16.	There are bars on the windows in the classroom.	1 2 3 4 5	143 38 91 113 12	100 86.4 91.9 89 75	0 3 4 7 1	0 6.8 4 5.5 6.3	0 0 0 3 1	0 0 0 2.4 6.3	0 0 0 0 1	0 0 0 0 6.3	0 3 4 4 1	0 6.8 4 3.1 6.3	0 0 0 0 0	0 0 0 0 0	.000*

Table 5.13 c

No.	Paragraph	school	Always		Often		sometimes		Very rarely		Never		Missing		P
			freq	%	freq	%	freq	%	freq	%	freq	%	freq	%	
17.	The classroom gets enough ventilation through the window	1 2 3 4 5	119 8 68 74 5	83.2 18.2 68.7 58.3 31.3	9 5 12 26 3	6.3 11.4 12.1 20.5 18.8	11 14 10 16 5	7.7 31.8 10.1 12.6 31.3	1 3 0 1 2	0.7 6.8 0 0.8 12.5	3 14 9 10 1	2.1 31.8 9.1 7.9 6.3	0 0 0 0 0	0 0 0 0 0	.000*
18.	There is a rubbish bin in the classroom	1 2 3 4 5	139 37 90 94 5	97.2 84.1 90.9 74 31.3	1 3 3 17 3	0.7 6.8 3 13.4 18.8	1 1 4 9 6	0.7 2.3 4 7.1 37.5	2 1 0 3 2	1.4 2.3 0 2.4 12.5	0 2 2 4 0	0 4.5 2 3.1 0	0 0 0 0 0	0 0 0 0 0	.000*
19.	Classrooms are cleaned periodically	1 2 3 4 5	94 22 30 58 2	65.7 50 30.3 45.7 12.5	20 8 23 11 3	14 18.2 23.2 8.7 18.8	20 4 22 31 1	14 9.1 22.2 24.4 6.3	7 6 18 18 3	4.9 13.6 18.2 14.2 18.8	2 4 6 8 7	1.4 9.1 6.1 6.3 43.8	0 0 0 1 0	0 0 0 0.8 0	.000*
20.	There is appropriate lighting in the classroom	1 2 3 4 5	108 19 61 70 2	75.5 43.2 61.6 55.1 12.5	16 9 12 28 0	11.2 20.5 12.1 22 0	11 8 14 20 3	7.7 18.2 14.1 15.7 18.8	4 5 6 4 3	2.8 11.4 6.1 3.1 18.8	4 3 6 5 8	2.8 6.8 6.1 3.9 50	0 0 0 0 0	0 0 0 0 0	.000*
21.	Your seat is comfortable	1 2 3 4 5	53 11 36 32 1	37.1 25 36.7 25.2 6.3	23 10 15 12 1	16.1 22.7 15.3 9.4 6.3	23 4 12 14 2	16.1 9.1 12.2 11 12.5	5 4 7 13 1	3.5 9.1 7.1 10.2 6.3	39 15 28 56 11	27.3 34.1 28.6 44.1 68.8	0 0 0 0 0	0 0 0 0 0	.008*

1=Sayeda Sara - 2=Gernata - 3=Abu Daba'at- 4=Abu Hanak- 5=Yosry Natsheh.

P values marked with (*) were derived using the Fisher exact test, and all others were done using the Chi-square test.

Section three: Teachers' responses to the SHP related questions :

Similar to the students' questionnaire, the teachers' questionnaire consisted of 50 items related to the implementation of the four components of the school health program in their schools including: health education (10 questions), school nutrients (7questions), school health services (12 questions) and school health environment (21 questions). Each one is discussed in more detail below.

5.6 The health education and promotion:

As shown in Table 5.14, the majority of the teachers (93%, n=106) reported that there was "always or often" a health committee at their schools. Furthermore, 88.6% (n=101) of the participants indicated that students were "always or often" aware of the importance of school hygienic facilities, and only 11.4% (n=13) of them reported that students were "sometimes" aware of it .

For the posting of the bulletin boards, they used the school radio to broadcast health information and the dissemination of health awareness publications. More than half of the respondents (64%, n=73) stated that bulletin boards with hygienic awareness material were "always or often" posted at school, whereas one third stated it as "sometimes". Only one teacher (0.9%) responded to it as "very rarely". For health information, more than half of the teachers (58.8%, n=67) reported it is "always or often" broadcast over school radio, while 37.7% (n= 43) indicated it as "sometimes", and only 4 teachers (3.5%) stated it as "very rarely".

For organizing competitions and voluntary activities for the students, 48.2% (n=55) stated that competitions were "very rarely or never" organized to improve the health and positive behavior of the students, while 37.7% (n=43) indicated it as "sometimes". Also, 62.3% (n=71) stated that students were "always or often" involved in voluntary activities, whereas 37.7% (n=43) of them reported it as "sometimes".

For the hygiene inspections, 66.7 % (n=76) of the teachers reported that the students' personal hygiene was "always or often" inspected regularly at schools, while 32.5% (n=37) of them reported it as “sometimes". For students' awareness about the importance of personal hygiene at school, the majority of the participants (83.3%, n=95) indicated that students were "always or often" aware of this issue, and only one teacher (0.9) stated it as "very rarely".

Similar to previous results, 66.5% (n=69) of the respondents reported that students were "always or often" aware of the importance of checking expiry dates, 35.1% (n=40) of them indicated it as "sometimes", while only 4 teachers (n=3.5) stated it as "never or rarely". Their point of views regarding health awareness publications were divided nearly equally as 50% (n=57) of the teachers indicated that these publications were "sometimes" disseminated and 48.2 % (n=55) of them reported it as "always or often”. Only 2 teachers (n=1.8%) stated it as "very rarely" .

Table (5.14): The percentage and frequency of teachers' response to the health education and promotion related questions:

No.	Paragraph	Always		Often		sometimes		Very rarely		Never		Missing	
		%	freq	%	freq	%	freq	%	freq	%	freq	%	freq
1.	There is a Health Committee at school	68.4	78	24.6	28	7	8	0	0	0	0	0	0
2.	Students are aware of the importance of the school hygienic facilities	60.5	69	28.1	32	11.4	13	0	0	0	0	0	0
3.	Bulletin boards are posted at school	7.9	9	56.1	64	35.1	40	0.9	1	0	0	0	0
4.	Health information is brodcast over the school radio	15.8	18	43.0	49	37.7	43	3.5	4	0	0	0	0
5.	Competitions are organized at school	4.4	5	9.6	11	37.7	43	38.6	44	9.6	11	0	0
6.	The students are involved in voluntary activities	24.6	28	37.7	43	37.7	43	0	0	0	0	0	0
7.	The students' personal hygiene is inspected regularly at school	36.0	41	30.7	35	32.5	37	0.9	1	0	0	0	0
8.	Students are aware of personal hygiene	56.1	64	27.2	31	15.8	18	0.9	1	0	0	0	0
9.	Students are aware of checking expiry date of food items	19.3	22	41.2	47	35.1	40	2.6	3	0.9	1	0.9	1
10.	Awarness publications are being disseminated at school	3.5	4	44.7	51	50.0	57	1.8	2	0	0	0	0

5.7 School nutrition :

The canteen is one of the important school services and school environment which plays a crucial role in the provision and promotion of healthy eating habits. As shown in Table 5.15, less than half of the participants (42.9%, n=49) reported that there were "always or often" healthy food in the canteen, 28.1% (n=32) of them indicated it as "very rarely or never" and 28.9% (n=33) stated it as "sometimes". Likewise, more than half of the teachers (59.6%, n=68) reported that information about the importance of nutrition were "always or often" broadcast, while 37.7% (n=43) of them indicated it as "sometimes" and only 2 teachers (1.8%) stated it as "very rarely". The majority of the teachers (94.8%, n=108) reported that the school "never or rarely" distributed free nutritious food items to the students, while 4 respondents (3.5%) stated it as "sometimes" and only 2 participants(1.8%) reported it as "always".

For the personal hygiene of the canteen workers, 68.4% (n=78) reported that the workers in the canteen were "always or often" cautious about their personal hygiene, and only 2.7% (n=3) indicated it as "never or rarely". Also, the majority of the participants (81.6%, n=93) indicated that the food and other related items were "always or often" kept covered and in a clean environment, while 28% (n=33) reported it as "sometimes" and only 2 teachers (1.8%) stated it as "never or rarely".

For the availability of a refrigerator, the majority of the teachers (83.3%, n=95) indicated that the canteen "always or often" had a refrigerator, and 11 teachers (9.6%) reported it as "never or rarely". Finally, for chips and chocolate, 78.1% (n=89) of the teachers stated that these items were "always or often" sold in the canteen, while 21.9% (n=25) answered it as "sometimes".

Table 5.15: The percentage and frequency of teachers' responses to the school nutrition related questions:

No.	Paragraph	Always		Often		sometimes		Very rarely		Never		Missing	
		%	freq	%	freq	%	freq	%	freq	%	freq	%	Freq
1.	There are healthy foods and drinks in school canteen.	9.6	11	33.3	38	28.9	33	20.2	23	7.9	9	0	0
2.	Information about importance of nutritious food is being broadcasted	11.4	13	48.2	55	37.7	43	1.8	2	0	0	0.9	1
3.	The school distributes free nutritious food items	1.8	2	0	0	3.5	4	21.1	24	73.7	84	0	0
4.	Workers in the canteen are cautious about their personal hygiene	21.9	25	46.5	53	28.9	33	1.8	2	0.9	1	0	0
5.	Food and other related items are kept covered and in clean environment	35.1	40	46.5	53	16.7	19	0.9	1	0.9	1	0	0
6.	The canteen has a refrigerator	76.3	87	7	8	7	8	6.1	7	3.5	4	0	0
7.	chips, chocolate are being sold in the canteen.	34.2	39	43.9	50	21.9	25	0	0	0	0	0	0

5.8 School health service:

For school health services, teachers were asked if students had health cards and interestingly, 60.5% (n=69) of the participants reported that students "always or often" hold a health card at school, whereas 27.2% (n=31) indicated that as "never or rarely". For vaccinations, more than two thirds of the teachers (67.6%, n=97) reported that students were "always or often" given vaccines at school, while 29.8% (n=34) of them indicated it as "sometimes", and 12.3% (n=14) reported it as "never or rarely".

For hair hygiene inspection, the majority of the respondents (62.3%, n=71) indicated that students were "always or often" inspected, while 23.7% (n=27) of them reported it as "sometimes", and only 12.3% (n=14) responded as "never or rarely". In cases of suspicion of infection, 52.7% (n=60) of them indicated that the school administration "never or rarely" called for professional health assistance, and 24.6% (n=28) indicated it as "sometimes", while only 21.9% (n=25) of the them stated it as "always or often". In case of emergencies such as students' injuries, the majority of the participants (84.2%, n=96) reported that the students were "always or often" assisted or transferred to hospital, 14.9% (n=17) answered it "sometimes", and only 0.9% (n=1) stated it as "very rarely ".

For dental examinations, 62.3% (n=96) of the participants reported they were "always or often" conducted at school, while only 3.5% (n=4) of the teachers indicated it as "very rarely or never". Furthermore, for eyesight tests, only 1.8% (n=2) of the participants stated that it was "never or rarely" conducted for students during their school years, while more than half of them (54.4%, n= 62) reported that this test was "always or often" conducted at school.

In addition, 93% (n=106) of the teachers stated that the school "never or rarely" had a clinic, while 4.4% (n=5) indicated that as "always or often" and only 2.6% (n=3) reported it as "sometimes". The vast majority of the participants (94.7%, n=108) indicated that there has "never" been a doctor or nurse at their school, while only 0.9 %(n=1) reported that there has "often" been a doctor or nurse, and 1.8 % (n=2) of them reported it as "sometimes". Also, 67.5%, (n=77) of them indicated that their schools were "always or often" visited by a health team, 29.8% (n=34) stated it as "sometimes", and only 2.6% (n=3) reported it as "never".

Nearly all the teachers (99.1%, n=113) stated that there was "always or often" a first-aid kit at school, and only one participant (0.9%) reported it as "sometimes". Finally, 64.9% (n=74) of them revealed that students "always or often" faced health issues that required treatment within school as shown in Table 5.16.

Table 5.16: The percentage and frequency of teachers' responses to the school health service related questions:

No.	Paragraph	Always		Often		sometimes		Very rarely		Never		Missing	
		%	freq	%	freq	%	freq	%	freq	%	freq	%	Freq
1.	Each student holds a health card at school	26.3	30	34.2	39	11.4	13	7.9	9	19.3	22	0.9	1
2.	Students are given vaccines at school	28.1	32	39.5	45	29.8	34	0.9	1	0.9	1	0.9	1
3.	Student hair hygiene is being inspected at school	20.2	23	42.1	48	23.7	27	4.4	5	7.9	9	1.8	2
4.	In the case of suspicion of infection, the school administration calls for proffesional health assistance	7	8	14.9	17	24.6	28	24.6	28	28.1	32	0.9	1
5.	In the case of emergencies such as student injuries at school , the student is being assisted or transferred to hospital	45.6	52	38.6	44	14.9	17	0.9	1	0	0	0	0
6.	Dental examination is conducted	15.8	18	46.5	53	34.2	39	2.6	3	0.9	1	0	0
7.	Eyesight test is conducted	10.5	12	43.9	50	43.9	50	0.9	1	0.9	1	0	0
8.	The school has a clinic .	3.5	4	0.9	1	2.6	3	3.5	4	89.5	102	0	0
9.	There is a doctor or a nurse at school	0	0	0.9	1	1.8	2	2.6	3	94.7	108	0	0
10.	The school is being visited by a school health team	14	16	53.5	61	29.8	34	2.6	3	0	0	0	0
11.	There is a first-aid kit at school	89.5	102	9.6	11	0.9	1	0	0	0	0	0	0
12.	Students face health issues that require treatment within the school	26.3	30	38.6	44	26.3	30	7.9	9	0.9	1	0	0

5.9 School health environment:

The final section of the questionnaire was school health environment as shown in Table 5.17 below. As noticed, the majority of the participants (96.5%, n=110) indicated that there was "always or often" a rubbish bin in the school yard and only 3.5% (n=4) of the teachers stated it as "sometimes". Moreover, 68.5% (n=78) reported that the school yard was "always or often" spacious, while 12.3% (n=14) stated the school yard as "rarely or never" spacious. Furthermore, 78.9% (n=80) of the teachers reported that the school yard was "always or often" clean, 17.5% (n=20) stated it as "sometimes" and only 4 participants (3.5 %) indicated it as "very rarely" clean.

Regarding the availability of the green gardens, 57.9% (n=66) of the participants reported that school "always or often" had a green garden, and 35.9% (n=41) of them indicated it as "rarely or never." Also, the majority of the teachers (73.7%, n=84) stated that there was "never or rarely" air conditioning units at school, while only 13.1% (n=15) of them reported it as "always or often". For the availability of heating systems at school, 45.6% (n=52) of the respondents indicated it as "never or rarely", while 24.6% (n=28) stated that there were "always or often" heating systems at their school. The vast majority of the participants (91.2%, n=104) reported that there were "always or often" appropriate sinks at their schools, whereas only one teacher (0.9) reported it as "never". Also, a high percentage of the respondents (86.8%, n=99) indicated that drinking water was "always or often" accessible at their schools, and only 13.2 % (n=15) of the participants reported it as "sometimes."

For drinking from the tap water, 70.2% (n=80) claimed that the students "always or often" drank from the tap water at their schools, and 28.9% (n=33) reported it as "sometimes". In addition, 68.5% (n=78) of them indicated that the taste of the water was "always or often" fine, while 21.9% (n=25) stated it as "rarely or never", and only 11 teachers (9.6%) reported it as "sometimes". Another supporting finding of their point of view regarding school water was that the majority of the participants (93.9%, n=107) indicated that the drinking water at their schools was "never or rarely" smelly and only 4.4% (n=5) reported it as "always or often". Moreover, 92.1% (n=105) of them stated that toilets were "always or often" provided

with water, while only 2 teachers (1.8%) reported it as "very rarely". Furthermore, 66.7% (n=76) of them indicated that school toilets were "always or often" cleaned, 27.2% (n=31) reported it as "sometimes" and 7 teachers (6.1%) stated it as "never or rarely".

In addition to the previous questions, teachers were asked if the space of the class was adequate, and the majority (71.9%, n=82) indicated it as "always or often" compatible with the number of students, whereas only 24.5% (n=26) of them reported it as "rarely or never". For windows, a high percentage of the teachers (86%, n=98) stated that there were “always or often" windows in the classrooms, while 16 participants (14%) answered it as "sometimes".

For safety, the vast majority of the respondents (94.7%, n=108) reported that windows "always or often" had bars, while only one teacher indicated it as "never". Also, 86% (n=98) of the participants reported that classrooms "always or often" had enough ventilation through the window, and 83.3% (n=95) of them reported that classrooms were "always or often" cleaned periodically. Furthermore, 85.9% (n=98) of the teachers indicated that there was "always or often" appropriate lighting in the classroom, whereas only 14% (n=16) of them reported it as "sometimes'. Finally, 74.6% (n=85) stated that students' seats were "always or often" comfortable, and only 2.7 % (n=3) answered it as "rarely or never".

Table 5.17 a : The percentage and frequency of teachers' response to school health environment related questions

No.	Paragraph	Always		Often		sometimes		Very rarely		Never		Missing	
		%	freq	%	freq	%	freq	%	freq	%	freq	%	Freq
1.	There is a rubbish bin in the school yard	90.4	103	6.1	7	3.5	4	0	0	0	0	0	0
2.	The school yard is spacious	66.7	76	1.8	2	18.4	21	4.4	5	7.9	9	0.9	1
3.	The school yard is clean	29.8	34	49.1	56	17.5	20	3.5	4	0	0	0	0
4.	The school has a green garden.	50	57	7.9	9	6.1	7	6.1	7	29.8	34	0	0
5.	There are air conditioning units at school	7	8	6.1	7	13.2	15	41.2	47	32.5	37	0	0
6.	There are heating systems at school	11.4	13	13.2	15	29.8	34	20.2	23	25.4	29	0	0
7.	There are appropriate sinks at school	59.6	68	31.6	36	7.9	9	0	0	0.9	1	0	0
8.	Drinking water is accessible at school	28.9	33	57.9	66	13.2	15	0	0	0	0	0	0
9.	Students drink from the tap water at school	28.1	32	42.1	48	28.9	33	0	0	0	0	0.9	1
10.	The drinking water's taste at school is fine.	24.6	28	43.9	50	9.6	11	14.9	17	7	8	0	0
11.	The drinking water at school is smelly	1.8	2	2.6	3	1.8	2	32.5	37	61.4	70	0	0
12.	Toilets at school are provided with water	57.9	66	34.2	39	6.1	7	1.8	2	0	0	0	0
13.	The school toilets are clean	14.9	17	51.8	59	27.2	31	2.6	3	3.5	4	0	0
14.	The space of the classroom is compatable with the number of students.	48.2	55	23.7	27	3.5	4	10.5	12	14	16	0	0
15.	There are windows in the classroom	70.2	80	15.8	18	14	16	0	0	0	0	0	0
16.	The windows have bars in the classroom.	65.8	75	28.9	33	4.4	5	0	0	0.9	1	0	0

Table 5.17 b

No.	Paragraph	Always		Often		sometimes		Very rarely		Never		Missing	
		%	freq	%	freq	%	freq	%	freq	%	freq	%	freq
17.	The classroom gets enough ventilation through window	43	49	43	49	10.5	12	3.5	4	0	0	0	0
18.	There is a rubbish bin in the classroom	91.2	104	8.8	10	0	0	0	0	0	0	0	0
19.	Classrooms are being cleaned periodically	37.7	43	45.6	52	16.7	19	0	0	0	0	0	0
20.	There is appropriate lighting in the classroom	44.7	51	41.2	47	14	16	0	0	0	0	0	0
21.	The student's seats are comfortable	30.7	35	43.9	50	22.8	26	1.8	2	0.9	1	0	0

A cross tabulation by using the Chi-square and Fisher exact tests was done to assess the relation between teachers' gender and their responses to the questions related to the four components of SHP.

For health education and promotion, the findings showed that male teachers tended to answer "always" more often than the female teachers and the relationship was statistically significant for all questions, except six questions (q1,q2,q3,q4,q8 and q10) as shown in Table 5.18.

For example, 48.6% (n=34) of the female teachers versus 22.7% (n=48.6) of the male teachers stated that competitions were "very rarely" organized to improve positive behavior at school, while 4.5% (n=2) of the male teachers and 4.3% (n=3) of the female teachers indicated that as "always" (p=.002). Also, 32.9% (n=23) of the female participants and 11.4% (n=5) of the male teachers indicated that students were "always" involved in voluntary activities, and 40% (n=28) of the female teachers versus 34.1% (n=15) of the male teachers reported it as "sometimes" (p=0.005).

In addition, 59.1% (n=26) of the male participants versus 21.4% (n=15) of the female participants reported that students' personal hygiene was "always" inspected regularly at their school, while 40% (n=28) of the female respondents versus 20.5% (n=9) of the male respondents indicated it as "sometimes" (p=0.000).

Moreover, 25% (n=11) of the male teachers and 15.7% (n=11) of the female teachers reported that they "always" made the students aware of the importance of checking the expiry date of the food items in the school canteen. However, 4.5% (n=2) of the male participants and 1.4% (n= 1) of the female participants answered it as "very rarely" (p=0.001).

Table 5.18: Distribution of teachers' responses to the health education and promotion related questions by gender

No.	Paragraph	sex	Always		Often		Sometimes		Very rarely		Never		P
			Freq	%	freq	%	freq	%	freq	%	freq	%	
1.	There is a Health Committee at school	M F	29 49	65.9 70	9 19	20.5 27.1	6 2	13.6 2.9	0 0	0 0	0 0	0 0	.102*
2.	Students are made aware of the importance of the school hygienic facilities	M F	25 44	56.8 62.9	12 20	27.3 28.6	7 6	15.9 8.6	0 0	0 0	0 0	0 0	.483
3.	Bulletin board with hygenic awareness material posted at school	M F	3 6	6.8 8.6	26 38	59.1 54.3	15 25	34.1 35.7	0 1	0 1.4	0 0	0 0	.976*
4.	Health information is brodcasted through the school radio	M F	7 11	15.9 15.7	19 30	43.2 42.9	16 27	36.4 38.6	2 2	4.5 2.9	0 0	0 0	.983*
5.	Competitions are organised to improve positive behaviour at school	M F	2 3	4.5 4.3	4 7	9.1 10	26 17	59.1 24.3	10 34	22.7 48.6	2 9	4.5 12.9	.002*
6.	Students are involved in voluntary activities at school	M F	5 23	11.4 32.9	24 19	54.5 27.1	15 28	34.1 40	0 0	0 0	0 0	0 0	.005
7.	Students' personal hygiene is inspected regularly at school	M F	26 15	59.1 21.4	8 27	18.2 38.6	9 28	20.5 40	1 0	2.3 0	0 0	0 0	.000*
8.	Students are aware of the importance of personal hygiene at school	M F	24 40	54.5 57.1	10 21	22.7 30	9 9	20.5 12.9	1 0	2.3 0	0 0	0 0	.359*
9.	Students are aware of the importance of checking expiry dates on offered food items in canteen	M F	11 11	25 15.7	24 23	54.5 32.9	6 34	13.6 48.6	2 1	4.5 1.4	1 0	2.3 0	.001*
10.	Awareness publications are being disseminated at school	M F	2 2	4.5 2.9	24 27	54.5 38.6	17 40	38.6 57.1	1 1	2.3 1.4	0 0	0 0	.318*

P values marked with (*) were derived using the Fisher exact test, and all others were done using the Chi-square test.

The Chi square and Fisher tests were used to assess the relation between teachers' gender and their responses to school nutrition related questions as shown in Table 5.19. Findings revealed a statistically significant relationship for most of the questions except three questions (q2,q3,q4). In general, male teachers tended to answer "often" more, while the female teachers selected "always" for most of the questions in this section.

For example, 13.6% (n=6) of the male teachers versus 7.1% (n=5) of the female teachers indicated that there was "always" healthy food and drinks at school canteen, while 38.6% (n=17) of the male participants versus 30% (n=21) of female respondents stated it as "often" (p=.001). In addition, 79.5% (n=35) of the male participants versus 70% (n=49) of the female participants reported that school "never" distributed free nutritious food items, while 2.3% (n=1) of the male participants versus 1.4% (n=1) of the female participants indicated that as "always" (p=.394) .

Moreover, 54.5% (n=24) of the male teachers versus 41,4% (n=29) of the female teachers reported that the workers in the canteen were "often" cautious about their personal hygiene (p=.330). Also, 45.7% (n=32) of the female teachers versus 18.2% (n=8) of the male teachers indicated that the food and other related items were "always" kept in a clean environment (p=.008). Likewise, 84.3% (n=59) of the female participants versus 63.6% (n=28) of the male participants indicated that there was "always" a refrigerator at the canteen, while 6.8% (n=3) of the male teachers and 1.4% (n=1) of the female teachers stated that as "never" (p=.002).

Finally, 48% (n=34) of the female teachers versus 11.4% (n=5) of the male teachers indicated that chips and chocolate were "always" sold in the school canteen, while 61.4% (n=27) of the male participants versus 32.9% (n=23) of the female participants reported it as "often" (p=0.000).

Table 5.19: Distribution of teachers' responses to the school nutrition related questions by gender:

No.	paragraph	sex	Always		Often		Sometimes		Veryrarely		Never		Missing		P
			freq	%	freq	%	freq	%	freq	%	freq	%	freq	%	
1.	There are healthy foods and drinks at school	M	6	13.6	17	38.6	18	40.9	2	4.5	1	2.3	0	0	.001*
		F	5	7.1	21	30	15	21.4	21	30	8	11.4	0	0	
2.	Information about importance of nutrition is being broadcasted through the school radio	M	4	9.1	26	59.1	12	27.3	2	4.5	0	0	0	0	.066*
		F	9	12.9	29	41.4	31	44.3	0	0	0	0	1	1.4	
3.	The school distributes free nutritious food items	M	1	2.3	0	0	0	0	8	18.2	35	79.5	0	0	.394*
		F	1	1.4	0	0	4	5.7	16	22.9	49	70	0	0	
4.	Workers in the canteen are cautious about their personal hygiene	M	9	20.5	24	54.5	10	22.7	0	0	1	2.3	0	0	.330*
		F	16	22.9	29	41.4	23	32.9	2	2.9	0	0	0	0	
5.	Food and other related items are kept in clean environment	M	8	18.2	27	61.4	8	18.2	0	0	1	2.3	0	0	.008*
		F	32	45.7	26	37.1	11	15.7	1	1.4	0	0	0	0	
6.	The canteen has a refrigerator	M	28	63.6	2	4.5	4	9.1	7	15.9	3	6.8	0	0	.002
		F	59	84.3	6	8.6	4	5.7	0	0	1	1.4	0	0	
7.	Chips, chocolate are being sold in the canteen	M	5	11.4	27	61.4	12	27.3	0	0	0	0	0	0	.000
		F	34	48.6	23	32.9	13	18.6	0	0	0	0	0	0	

P values marked with (*) were derived using the Fisher exact test. All others were done using the Chi-square test.

For school health services, the Fisher exact test revealed significant relationship for all the questions except five questions (q2, q6, q7, q8, q12) as shown in Table 5.20. In general, the female teachers tended to answer "always" while male teachers selected "often and sometimes" for most of the questions.

For example, 40% (n=28) of the female teachers and 4.5% (n=2) of the male teachers indicated that students "always" hold a health card at school, while 56.8% (n=25) of the male participants versus 20% (n=14) of the female participants stated that as "often" (p=0.000). Also, 18.2% (n=8) of the male teachers versus 1.4% (n=1) of the female teachers indicated that students' hair hygiene was "never" inspected at their schools, and 25% (n=11) of the male teachers versus 17.1% (n=12) of the female teacher stated that as "always" (p=.000).

In addition, 31.8% (n=14) of the male participants versus 25.7% (n=18) of the female participants indicated that in case of suspicion of infection, the school administration "never" called for professional health assistance, while 36.4% (n=16) of the male teachers versus 17.1% (n=12) of the female teachers answered it as "sometimes" (p=0.000). Likewise, 60% (n=42) of the female participants and 22.7% (n=10) of the male participants reported that in cases of emergencies such as students' injuries, the student was "always" assisted or transferred to a hospital, while 63.6% (n=28) of the male respondents versus 22.9% (n=16) of the female respondents indicated it as "often" (p=0.000).

In regard to a school health team visitation, 40.9% (n=18) of the male teachers versus 22.9% (n=16) of the female teachers indicated that their schools were "sometimes" visited by a school health team, while 20% (n=14) of the female participants versus 4.5% (n=2) stated that as "always" (p=0.004) .

Finally, 97.1% (n=68) of the female teachers versus 77.3% (n=34) of the male teachers reported that there was "always" a first-aid kit at their school and 20.5% (n=9) of the male participants versus 2.9% (n=2) of the female participants indicated it as "often" (p=.002).

Table 5.20: Distribution of teachers' responses to school health services related questions by gender:

No.	Paragraph	Sex	Always		Often		Sometimes		Veryrarely		Never		Missing		P
			freq	%	freq	%	freq	%	freq	%	freq	%	freq	%	
1.	Students hold health card at school	M F	2 28	4.5 40	25 14	56.8 20	6 7	13.6 10	0 9	0 12.9	11 11	25 15.7	0 1	0 1.4	.000*
2.	Students are given vaccines at school	M F	15 17	34.1 24.3	19 26	43.2 37.1	8 26	18.2 37.1	1 0	2.3 0	1 0	2.3 0	0 1	0 1.4	.079*
3.	Students hair cleanliness is being inspected at school	M F	11 12	25 17.1	16 32	36.44 5.7	2 25	4.5 35.7	5 0	11.4 0	8 1	18.2 1.4	2 0	4.5 0	.000*
4.	In the case of suspicion of infection, the school administration calls for professional health assistance	M F	3 5	6.8 7.1	10 7	22.7 10	16 12	36.4 17.1	0 28	0 40	14 18	31.8 25.7	1 0	2.3 0	.000*
5.	In case of emergencies,the student is assisted or transferred to hospital	M F	10 42	22.7 60	28 16	63.6 22.9	5 12	11.4 17.1	1 0	2.3 0	0 0	0 0	0 0	0 0	.000*
6.	Dental examination is being conducted.	M F	8 10	18.2 14.3	24 29	54.5 41.4	9 30	20.54 2 9	2 1	4.5 1.4	1 0	2.3 0	0 0	0 0	.057*
7.	Eyesight test is being conducted .	M F	4 8	9.1 1.4	21 29	47.7 41.4	17 33	38.6 47.1	1 0	2.3 0	1 0	2.3 0	0 0	0 0	.411*
8.	The school has a clinic.	M F	2 2	4.5 2.9	0 1	0 1.4	2 1	4.5 1.4	3 1	6.8 1.4	37 65	84.1 92.9	0 0	0 0	.327*
9.	There is a doctor or a nurse at school.	M F	1 0	2.3 0	2 0	4.5 0	3 0	6.8 0	38 70	86.4 100	0 0	0 0	0 0	0 0	.003*
10.	The school is being visited by a school health team	M F	2 14	4.5 20	21 40	47.7 57.1	18 16	4 0.9 22.9	3 0	6.8 0	0 0	0 0	0 0	0 0	.004*
11.	There is a first-aid kit at school.	M F	34 68	77.3 97.1	9 2	20.5 2.9	1 0	2.3 0	0 0	0 0	0 0	0 0	0 0	0 0	.002*
12.	The students face health issues that require treatment within the school	M F	10 20	22.7 28.6	21 23	47.7 32.9	9 21	20.5 30	3 6	6.8 8.6	1 0	2.3 0	0 0	0 0	.335*

P values marked with (*) were derived using the Fisher exact test. All others were done using the Chi-square test.

Finally, there was a statistically significant relation between teachers' gender and their responses to school health environment related questions except two questions (q8, q11) as shown in Table 5.21. In general, the female teachers tended to answer "always" while the male teachers answered " very rarely or never".

For example, 81.4% (n=57) of the female teachers indicated that the school "always" had a green garden, while 77.3% (n=34) of the male participants versus none of the female participants reported it as "never"(p=.000). In addition, 45.5% (n=20) of the male participants versus 24.3% (n=17) of the female participants indicated that there were "never" air conditioning units at their school, while 10% (n=7) of the female teachers versus 2.3% (n=1) of the male teachers reported that as " always" (p=.002).

Likewise, 50% (n=22) of the male teachers versus 10% (n=7) of the female teachers reported that school "never" had heating systems, while 14.3% (n=10) of the female teachers versus 6.8% (n=3) of the male teachers indicated it as "always" (p=.000). Also, 82.9% (n=58) of the female respondents versus 22.7% (n=10) of the male respondents indicated that that there were "always" sinks at their schools, while 61.4% (n=27) of the male teachers versus 12.9% (n=9) of the female teachers answered it as "often"(p-=.000). Moreover, 68.2% (n=30) of the male participants and 25.7% (n=18) of the female participants indicated that students "often" drank from the tap water at their schools, while 31.4% (n=22) of the female teachers versus 22.7% (n=10) of the male teachers reported it as "always" (p=.000).

As for the school toilets, 80% (n=56) of the female teachers versus 22.7% (n=10) of the male teachers indicated that school toilets are "always" provided with water, while 63.2% (n=28) of the male participants versus 15.7% (n=11) of the female participants reported it as "often" (p=.000). Furthermore, 22.9% (n=16) of the female participants and only 2.3% (n=1) of the male participants indicated that the school toilets were "always" clean, while 75% (n=33) of the male teachers versus 37.1% (n=26) of the female teachers answered that as "often" (p=.000).

For cleaning the classroom periodically, 55.7% (n=39) of the female teachers versus 9.1% (n=4) of the male teachers indicated that the classrooms were "always" cleaned periodically, while 72.% (n=32) of the male participants versus 28.6% (n = 20) of the female participants stated that as "often" (p =.000) .

Finally, for comfortability of the seats, 50% (n=22) of the male participants versus 40% (n=28) of the female participants indicated that students seats were "often" comfortable, while 50% (n=35) of the female teachers stated it as "always" (p=.000) .

Table 5.21a: Distribution of teachers' responses to school health environment related questions by gender:

No.	Paragraph	sex	Always		Often		Sometimes		Very rarely		Never		Missing		P
			freq	%	freq	%	freq	%	freq	%	freq	%	freq	%	
1.	The school yard is spacious	M F	25 51	56.8 72.9	1 1	2.3 1.4	4 17	9.1 24.3	5 0	11.4 0	8 1	18.2 1.4	1 0	2.3 0	.000*
2.	There is a rubbish bin in the school yard	M F	35 68	79.5 97.1	5 2	11.4 2.9	4 0	9.1 0	0 0	0 0	0 0	0 0	0 0	0 0	.003*
3.	The school yard is clean	M F	18 16	40.9 22.9	10 46	22.7 65.7	12 8	27.3 11.4	4 0	9.1 0	0 0	0 0	0 0	0 0	.000*
4.	The school has a green garden.	M F	0 57	0 81.4	0 9	0 12.9	3 4	6.8 5.7	7 0	15.9 0	34 0	77.3 0	0 0	0 0	.000*
5.	There are air conditioning units at school	M F	1 7	2.3 10	0 7	0 10	2 13	4.5 18.6	21 26	47.7 37.1	20 17	45.5 24.3	0 0	0 0	.002*
6.	There are heating systems at school	M F	3 10	6.8 14.3	1 14	2.3 20	4 30	9.1 42.9	14 9	31.8 12.9	22 7	50 10	0 0	0 0	.000
7.	There are sinks at school	M F	10 58	22.7 82.9	27 9	61.4 12.9	7 2	15.9 2.9	0 1	0 1.4	0 0	0 0	0 0	0 0	.000*
8.	Drinking water is accessible at school	M F	12 21	27.3 30	26 40	59.1 57.1	6 9	13.6 12.9	0 0	0 0	0 0	0 0	0 0	0 0	.951
9.	Students drink from the tap water at school	M F	10 22	22.7 31.4	30 18	68.2 25.7	4 29	9.1 41.4	0 1	0 1.4	0 0	0 0	0 0	0 0	.000*
10.	The drinking water's taste at school is fine	M F	9 19	20.5 27.1	30 20	68.2 28.6	4 7	9.1 10	1 16	2.3 22.9	0 8	0 11.4	0 0	0 0	.000*
11.	The drinking water at school is smelly	M F	1 1	2.3 1.4	1 2	2.3 2.9	1 1	2.3 1.4	15 22	34.1 31.4	26 44	59.1 62.9	0 0	0 0	.983*
12.	Toilets at school are provided with water	M F	10 56	22.7 80	28 11	63.6 15.7	5 2	11.4 2.9	1 1	2.3 1.4	0 0	0 0	0 0	0 0	.000*
13.	The school toilets are clean	M F	1 16	2.3 22.9	33 26	75 37.1	4 27	9.1 38.6	2 1	4.5 1.4	4 0	9.1 0	0 0	0 0	.000*
14.	The space of the classroom is compatable with the no.of students.	M F	3 52	6.8 74.3	11 16	25 22.9	2 2	4.5 2.9	12 0	27.3 0	16 0	36.4 0	0 0	0 0	.000*

Table 5.21 b

No.	Paragraph	sex	Always		Often		Sometimes		Very rarely		Never		Missing		P
			freq	%	freq	%	freq	%	freq	%	freq	%	freq	%	
15.	There are windows in the classroom	M F	11 69	25 98.6	17 1	38.6 1.4	16 0	36.4 0	0 0	0 0	0 0	0 0	0 0	0 0	.000
16.	There are bars on the windows in the classroom.	M F	11 64	25 91.4	28 5	63.6 7.1	4 1	9.1 1.4	0 0	0 0	1 0	2.3 0	0 0	0 0	.000*
17.	The classroom gets enough ventilation through the windows	M F	6 43	13.6 61.4	32 17	72.7 24.3	3 9	6.8 12.9	3 1	6.8 1.4	0 0	0 0	0 0	0 0	.000*
18.	There is a rubbish bin in the classroom	M F	37 67	84.1 95.7	7 3	15.9 4.3	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	.044*
19.	Classrooms are being cleaned periodically	M F	4 39	9.1 55.7	32 20	72.7 28.6	8 11	18.2 15.7	0 0	0 0	0 0	0 0	0 0	0 0	.000
20.	There is appropriate lighting in the classroom	M F	3 48	6.8 68.6	34 13	77.3 18.6	7 9	15.9 12.9	0 0	0 0	0 0	0 0	0 0	0 0	.000
21.	Students seats are comfortable	M F	0 35	0 50	22 28	50 40	20 6	45.5 8.6	1 1	2.3 1.4	1 0	2.3 0	0 0	0 0	.000*

P values marked with (*) were derived using the Fisher exact test. All others were done using the Chi-square test.

Once again, the chi-sqaured and fisher exact tests were used to examine the relationships between teachers' schools and their answers to the questions related to the four components of SHP .

For the heath education and promotion, the Chi-square and Fisher exact tests revealed a significant difference for all the questions except three questions (q3,q4,q10) as shown in Table 5.22. In general, Yosry Natsheh schools' teachers tended to answer "sometimes ", while the teachers of Abu Hanak school answered "always or often", Sayeda Sara schools' teachers responded " rarely or never" more and Gernata schools' teachers tended to answer "often or always".

For example, 95.7% (n=22) of the teachers of Abu Daba'at school versus 86.7% (n=26) of the teachers of Abu Hanak school indicated that there "always" is a health committee at their schools, while 50% (n=15) of Sayeda Sara schools' teachers reported it as "often" and 42.9% (n=6) of the teachers of Yosry Natsheh school stated it as "sometimes"(p=.000). Also, the results revealed that 80% (n=24) of Abu Hanak school's teachers reported that they “always" made the students aware about the importance of the school hygiene facilities, as did 76.7% (n=23) of Sayeda Sara school teachers, while 58.8% (n=10) of the teachers of Gernata school stated it as "often" (p=.000). Moreover, 63.3% (n=19) of the teachers of Sayeda Sara school and 47.8% (n=11) of the teachers of Abu Daba'at schools indicated that competitions were "very rarely" organized to improve healthy behavior of the students at their schools, while 66.7% (n=20) of the teachers of Abu Hanak school and 43.5% (n=10) of Abu Daba'at schools' teachers stated it as "sometimes"(p=.000). In addition, 60% (n=18) of Alsayeda Sara school teachers versus 57.1% (n=6) of the teachers of Yosry Natsheh reported that students' personal hygiene was "sometimes" inspected and 80% (n=24) of Abu Hanak school's teachers and 29.4% (n=5) of Gernata schools' teachers stated it as "always" (p=.000). Likewise, 73.1% (n=22) of the teachers of Abu Hanak school and 66.7% (n=20) of Alsayeda Sara school's teachers stated that students were "always" aware of the importance of personal hygiene, while 50% (n=7) of Yosry Natsheh schools' teachers versus 16.7%n=5) of Sayeda Sara schools' teachers reported it as "sometimes" (p=.000).

Finally, 63.3% (n=19) of the teachers of Abu Hanak schools' teachers versus 47.8% (n=11) of Abu Daba'at schools' teachers indicated that they "often" made the students aware of the importance of checking expiry dates of the offered food items in the school canteen, while 58.8% (n=10) of Gernata school's teachers and 56.7% (n=17) of the teachers of Sayeda Sara school stated it as "sometimes" (p=.000).

Table 5.22a: Distribution of teachers' responses to the health education and promotion related questions by teachers' schools:

No.	Paragraph	Schools	Always		Often		Sometimes		Very rarely		Never		Missing		P
			freq	%	freq	%	freq	%	freq	%	freq	%	freq	%	
1.	There is a Health Committee at school	1	14	46.7	15	50	1	3.3	0	0	0	0	0	0	.000*
		2	13	76.5	3	17.6	1	5.9	0	0	0	0	0	0	
		3	22	95.7	1	4.3	0	0	0	0	0	0	0	0	
		4	26	86.7	4	13.3	0	0	0	0	0	0	0	0	
		5	3	21.4	5	35.7	6	42.9	0	0	0	0	0	0	
2.	Students are aware of the importance of the school hygiene facilities	1	23	76.7	5	16.7	2	6.7	0	0	0	0	0	0	.000*
		2	4	23.5	10	58.8	3	17.6	0	0	0	0	0	0	
		3	17	73.9	5	21.7	1	4.3	0	0	0	0	0	0	
		4	24	80	6	20	0	0	0	0	0	0	0	0	
		5	1	7.1	6	42.9	7	50	0	0	0	0	0	0	
3.	Bulletin board with enviroment and hygenic awareness material posted at school	1	4	13.3	17	56.7	9	30	0	0	0	0	0	0	.227*
		2	2	11.8	10	58.8	4	23.5	1	5.9	0	0	0	0	
		3	0	0	11	47.8	12	52.2	0	0	0	0	0	0	
		4	1	3.3	20	66.7	9	30	0	0	0	0	0	0	
		5	2	14.3	6	42.9	6	42.9	0	0	0	0	0	0	
4.	Health information is broadcasted through the school radio	1	5	16.7	14	46.7	9	30	2	6.7	0	0	0	0	.892*
		2	2	11.8	9	52.9	6	35.3	0	0	0	0	0	0	
		3	4	17.4	7	30.4	12	52.2	0	0	0	0	0	0	
		4	4	13.3	14	46.7	11	36.7	1	3.3	0	0	0	0	
		5	3	21.4	5	35.7	5	35.7	1	7.1	0	0	0	0	
5.	Activities & competitions are organised to improve healthy and environmental positive behaviour at school	1	2	6.7	2	6.7	5	16.7	19	63.3	2	6.7	0	0	.000*
		2	0	0	4	23.5	2	11.8	4	23.5	7	41.2	0	0	
		3	1	4.3	1	4.3	10	43.5	11	47.8	0	0	0	0	
		4	1	3.3	2	3.3	20	66.7	7	23.3	0	0	0	0	
		5	1	7.1	2	7.1	6	42.9	3	21.4	2	14.3	0	0	
6.	Students are involved in voluntary activities at school like: cleaning day and environment day	1	10	33.3	3	10	17	56.7	0	0	0	0	0	0	.000*
		2	11	64.7	4	23.5	2	11.8	0	0	0	0	0	0	
		3	2	8.7	12	52.2	9	39.1	0	0	0	0	0	0	
		4	3	10	18	60	9	30	0	0	0	0	0	0	
		5	2	14.3	6	42.9	6	42.9	0	0	0	0	0	0	
7.	Students' personal hygiene is inspected regularly at school	1	6	20	6	20	18	60	0	0	0	0	0	0	.000*
		2	5	29.4	9	52.9	3	17.6	0	0	0	0	0	0	
		3	4	17.4	12	52.2	7	30.4	0	0	0	0	0	0	
		4	24	80	5	16.7	1	3.3	0	0	0	0	0	0	
		5	2	14.3	3	21.4	8	57.1	1	7.1	0	0	0	0	
8.	Students are aware of the importance of personal hygiene	1	20	66.7	5	16.7	5	16.7	0	0	0	0	0	0	.000*
		2	11	64.7	4	11.8	2	11.8	0	0	0	0	0	0	
		3	9	39.1	12	8.7	2	8.7	0	0	0	0	0	0	
		4	22	73.1	6	6.7	2	6.7	0	0	0	0	0	0	
		5	2	14.3	4	50	7	50	1	7.1	0	0	0	0	

Table 5.22 b

No.	Paragraph	Schools	Always		Often		sometimes		Very rarely		Never		Missing		P
			freq	%	freq	%	freq	%	freq	%	freq	%	freq	%	
9.	Students are aware of the importance of checking expiry dates on offered food items in school canteen	1	5	16.7	7	23.3	17	56.7	1	3.3	0	0	0	0	.000*
		2	2	11.8	5	29.4	10	58.8	0	0	0	0	0	0	
		3	4	17.4	11	47.8	7	30.4	0	0	0	0	1	4.3	
		4	11	36.7	19	63.3	0	0	0	0	0	0	0	0	
		5	0	0	5	35.7	6	42.9	2	14.3	1	7.1	0	0	
10.	Awareness publications are being disseminated	1	1	3.3	10	33.3	19	63.3	0	0	0	0	0	0	453*
		2	0	0	8	47.1	9	52.9	0	0	0	0	0	0	
		3	1	4.3	9	39.1	12	52.2	1	4.3	0	0	0	0	
		4	1	3.3	16	53.3	13	43.3	0	0	0	0	0	0	
		5	1	7.1	8	57.1	4	28.6	1	7.1	0	0	0	0	

1=Sayeda Sara - 2=Gernata - 3=Abu Daba'at- 4=Abu Hanak-.5= Yosry Natsheh .

P values marked with (*) were derived using the Fisher exact test. All others were done using the Chi-square test.

Also, as shown in Table 5.23, there was a statistically significant relationship between teachers' schools and their answers to the school nutrition related questions, except one question (q3). In general, all teachers' responses were positive except Gernata and Abu Daba'at schools which tended to answer "rarely of never" for some questions, while Yosry Natsheh school tended to answer "often or sometimes".

For example, 56.7% (n=17) of the teachers of Sayeda Sara school and 42.9% (n=6) of the teachers of Yosry Natsheh school indicated that healthy foods and drinks were "often" available in the school canteens, while 52.9% (n=9) of Gernata school teachers versus 39.1% (n=9) of Abu Daba'at school teachers reported it as " very rarely " (p=.000).

Moreover, 60% (n=18) of the teachers of Abu Hanak school versus 53.3% (n=16) of the teachers of Sayeda Sara school indicated that the canteen workers were "often" cautious about their personal hygiene, while 50% (n=7) of the teachers of Yosry Natsheh school and 43.5% (n=10) of the teachers of Abu Daba'at school stated that as "sometimes"(p=.001).

Also, 69.6% (n=16) of the teachers of Gernata school versus 66.7% (n=20) of Sayeda Sara school's teachers reported that food and other related items were "always" kept covered and in a clean environment, while 66.7% (n=20) of the teachers of Sayeda Sara school and 64.7% (n=11) of Gernata schools' teachers stated it as "always" (p=.000). In addition, 100% (n=17) of Gernata school's teachers and 93.3% (n=28) of Abu Hanak school's teachers reported that the canteen "always" had a refrigerator to keep food and juice, while 50% (n=7) of the teachers of Yosry Natsheh school stated it as "very rarely" (p=.000).

Finally, 100% (n=23) of Abu Daba'at school teachers and 36.7% (n=11) of Sayeda Sara school teachers stated that chips and chocolate were "always" sold in the canteen, while 100% (n=17) of Gernata schools' teachers reported it as "often" and 43.3% (n=13) of the teachers of Sayeda Sara versus 35.7%(n=5) indicated that as "sometimes" (p=.000).

Table 5.23 : Distribution of teachers' responses to school nutrition related questions by teachers' Schools :

No.	Paragraph	school	Always		Often		Sometimes		Very rarely		Never		Missing		P
			freq	%	freq	%	freq	%	freq	%	freq	%	freq	%	
1.	There are healthy foods and drinks in school canteen like natural juices, pastries, and fruit.	1 2 3 4 5	3 1 1 6 0	10 5.9 4.3 20 0	17 1 3 11 6	56.7 5.9 13 36.7 42.9	6 6 3 13 5	20 35.3 13 43.3 35.7	3 9 9 0 2	10 52.9 39.1 0 14.3	1 0 7 0 1	3.3 0 30.4 0 7.1	0 0 0 0 0	0 0 0 0 0	.000*
2.	Information about importance of nutrition and nutritious food are broadcasted through school radio	1 2 3 4 5	5 2 2 3 1	16.7 11.8 8.7 10 7.1	15 5 9 19 7	50 29.4 39.1 63.3 50	9 10 12 8 4	30 58.8 52.2 26.7 28.6	0 0 0 0 2	0 0 0 0 14.3	0 0 0 0 0	0 0 0 0 0	1 0 0 0 0	3.3 0 0 0 0	.163*
3.	The school distributes free nutritious food items such as milk, sandwiches of thyme and oil	1 2 3 4 5	1 0 0 1 0	3.3 0 0 3.3 0	0 0 0 0 0	0 0 0 0 0	1 0 3 0 0	3.3 0 13 0 0	7 5 4 3 5	23.3 29.4 17.4 10 35.7	21 12 16 26 9	70 70.6 69.6 86.7 64.3	0 0 0 0 0	0 0 0 0 0	.276*
4.	Workers in the canteen are cautious about their personal hygiene	1 2 3 4 5	4 9 3 9 0	13.3 52.9 13 30 0	16 3 10 18 6	53.3 17.6 43.5 60 42.9	8 5 10 3 7	26.7 29.4 43.5 10 50	2 0 0 0 0	6.7 0 0 0 0	0 0 0 0 1	0 0 0 0 7.1	0 0 0 0 0	0 0 0 0 0	.001*
5.	Food and other related items are kept covered and in a clean environment	1 2 3 4 5	20 11 1 8 0	66.7 64.7 4.3 26.7 0	7 3 16 20 7	23.3 17.6 69.6 66.7 50	2 3 6 2 6	6.7 17.6 26.1 6.7 42.9	1 0 0 0 0	3.3 0 0 0 0	0 0 0 0 1	0 0 0 0 7.1	0 0 0 0 0	0 0 0 0 0	.000*
6.	The canteen has a refrigerator to keep food and juice .	1 2 3 4 5	23 17 19 28 0	76.7 100 82.6 93.3 0	5 0 1 2 0	16.7 0 4.3 6.7 0	2 0 2 0 4	6.7 0 8.7 0 28.6	0 0 0 0 7	0 0 0 0 50	0 0 1 0 3	0 0 4.3 0 21.4	0 0 0 0 0	0 0 0 0 0	.000*
7.	Chips, chocolate are being sold in the canteen	1 2 3 4 5	11 0 23 2 3	36.7 0 100 6.7 21.4	6 17 0 21 6	20 100 0 21 6	13 0 0 7 5	43.3 0 0 23.3 35.7	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	.000*

1=Sayeda Sara - 2=Gernata -3=Abu Daba'at- 4=Abu Hanak- 5=Yosry Natsheh .

P values marked with (*) were derived using the Fisher exact test. All others were done using the Chi-square test.

For the school health service component of SHP, the chi-square and fisher exact tests revealed a significant difference except two questions (q2,q7) as shown in Table 5.24.

For example, 63.3% (n=19) of the teachers of Sayeda Sara school versus 52.9% (n=9) of Gernata schools' teachers and non of Abu Daba'at schools' teachers indicated that students "always" hold a health card at their schools, while 42.9% (n=6) of the teachers of Yosry Natsheh school versus 30.4% (n=7) of the teachers of Abu Daba'at school reported it as "never" (p=.000).

In addition, 53.3% (n=16) of Abu Hanak school teachers versus 52.2% (n=12) of the teachers of Abu Daba'at school indicated that students' hair hygiene was "often" inspected at school, while 57.1% (n=8) of the teachers of Yosry Natsheh school stated it as "never" (p= .000).

Also, 100% (n=14) of Yosry Natsheh school teachers versus 39.1% (n=9) of Abu Daba'at school teachers reported that in the case of suspicion of infection, school administration "never" called a health professional team, while 53.3% (n=16) of the teachers of Abu Hanak school versus 41.2% (n=7) of the teachers of Gernata school indicated that as "sometimes" (p=.000).

As for dental examinations, 60% (n=18) of the teachers of Abu Hanak school versus 47.8% (n=11) of the teachers of Abu Daba'at school indicated that a dental examination is "often" conducted during the student's school year, while 56.7% (n=17) of al Sayeda Sara schools' teachers and 50% (n=7) of Yosry Natsheh schools' teachers reported it as "sometimes" (p=.000).

Finally, 70.6% (n=12) of the teachers of Gernata school and 53.3% (n=16) of Sayeda Sara school participants and Abu Hanak schools' teachers stated that their schools were "often" visited by a school health team, while 43.3% (n=13) of the teachers of Abu Hanak versus 35.7% (n=5) of the teachers of Yosry Natsheh school indicated it as "sometimes" (p=.017).

Table 5.24 a : Distribution of teachers' responses to school health service related questions by teachers' schools :

No.	Paragraph	school	Always		Often		Sometimes		Very rarely		Never		Missing		p
			freq	%	freq	%	freq	%	freq	%	freq	%	freq	%	
1.	Students hold health card at school	1	19	63.3	9	30	0	0	0	0	2	6.7	0	0	.000*
		2	9	52.9	5	29.4	0	0	0	0	2	11.8	1	11.8	
		3	0	0	0	0	7	30.4	9	39.1	7	30.4	0	0	
		4	1	3.3	22	73.3	2	6.7	0	0	5	16.7	0	0	
		5	1	7.1	3	21.4	4	28.6	0	0	6	42.9	0	0	
2.	Students are given vaccines at school	1	10	33.3	7	23.3	13	43.3	0	0	0	0	0	0	.056*
		2	2	11.8	7	41.2	8	47.1	0	0	0	0	0	0	
		3	5	21.7	12	52.2	5	21.7	0	0	0	0	1	3.3	
		4	12	40	13	43.3	3	10	1	3.3	1	3.3	0	0	
		5	3	21.4	6	42.9	5	35.7	0	0	0	0	0	0	
3.	Students' hair cleanliness is inspected at school	1	7	23.3	14	46.7	9	30	0	0	0	0	0	0	.000*
		2	4	23.5	6	35.3	6	35.3	0	0	1	5.9	0	0	
		3	1	4.3	12	52.2	10	43.5	0	0	0	0	0	0	
		4	11	36.7	16	53.3	2	6.7	0	0	0	0	1	3.3	
		5	0	0	0	0	0	0	5	35.7	8	57.1	1	7.1	
4.	In the case of suspicion of infection, school administration calls health professional team	1	5	16.7	2	6.7	1	3.3	15	50	7	23.3	0	0	.000*
		2	0	0	1	5.9	7	41.2	7	41.2	2	11.8	0	0	
		3	0	0	4	17.4	4	17.4	6	26.1	9	39.1	0	0	
		4	3	10	10	33.3	16	53.3	0	0	0	0	1	3.3	
		5	0	0	0	0	0	0	0	0	14	100	0	0	
5.	In the case of emergencies such as student injuries at school ,the student is assisted or transferred to hospital	1	22	73.3	6	20	2	6.7	0	0	0	0	0	0	.000*
		2	10	58.8	7	41.2	0	0	0	0	0	0	0	0	
		3	10	43.5	3	13	10	43.5	0	0	0	0	0	0	
		4	10	33.3	19	63.3	1	3.3	0	0	0	0	0	0	
		5	0	0	9	64.3	4	28.6	0	0	1	7.1	0	0	
6.	Dental examination is being conducted during student's school years	1	2	6.7	11	36.7	17	56.7	0	0	0	0	0	0	.000*
		2	1	5.9	7	41.2	8	47.1	1	5.9	0	0	0	0	
		3	7	30.4	11	47.8	5	21.7	0	0	0	0	0	0	
		4	8	26.7	18	60	2	6.7	1	3.3	1	3.3	0	0	
		5	0	0	6	42.9	7	50	1	7.1	0	0	0	0	
7.	Eyesight test is being conducted	1	2	6.7	10	33.3	18	60	0	0	0	0	0	0	.101*
		2	0	0	9	52.9	8	47.1	0	0	0	0	0	0	
		3	6	26.1	10	43.5	7	30.4	0	0	0	0	0	0	
		4	4	13.3	15	50	10	33.3	0	0	1	3.3	0	0	
		5	0	0	6	42.9	7	50	1	7.1	0	0	0	0	
8.	The school has a clinic.	1	0	0	0	0	0	0	1	3.3	29	96.7	0	0	.028*
		2	0	0	0	0	0	0	0	0	17	100	0	0	
		3	2	8.7	1	4.3	1	4.3	0	0	19	82.6	0	0	
		4	2	6.7	0	0	2	6.7	0	0	26	86.7	0	0	
		5	0	0	0	0	0	0	3	21.4	11	78.6	0	0	

Table 5.24 b

No.	Paragraph	school	Always		Often		Sometimes		Very rarely		Never		Missing		p
			freq	%	freq	%	freq	%	freq	%	freq	%	freq	%	
9.	There is a doctor or a nurse at school.	1	0	0	0	0	0	0	0	0	30	100	0	0	
		2	0	0	0	0	0	0	0	0	17	100	0	0	
		3	0	0	0	0	0	0	0	0	23	100	0	0	.002
		4	0	0	1	3.3	2	6.7	0	0	27	90	0	0	
		5	0	0	0	0	0	0	3	21.4	11	78.6	0	0	
10.	The school is visited by school health team	1	7	23.3	16	53.3	7	23.3	0	0	0	0	0	0	.017*
		2	1	5.9	12	70.6	4	23.5	0	0	0	0	0	0	
		3	6	26.1	12	52.2	5	21.7	0	0	0	0	0	0	
		4	1	3.3	16	53.3	13	43.3	0	0	0	0	0	0	
		5	1	7.1	5	35.7	5	35.7	0	0	3	21.4	0	0	
11.	There is a first-aid kit at school.	1	29	96.7	1	3.3	0	0	0	0	0	0	0	0	.000*
		2	16	94.1	1	5.9	0	0	0	0	0	0	0	0	
		3	23	100	0	0	0	0	0	0	0	0	0	0	
		4	27	90	2	6.7	1	3.3	0	0	0	0	0	0	
		5	7	50	7	50	0	0	0	0	0	0	0	0	
12.	Did any of the students face health issues that required treatment within the school	1	17	56.7	7	23.3	4	13.3	2	6.7	0	0	0	0	.000*
		2	0	0	11	64.7	6	35.3	0	0	0	0	0	0	
		3	3	13	5	21.7	11	47.8	4	17.4	0	0	0	0	
		4	9	30	18	60	3	10	0	0	0	0	0	0	
		5	1	7.1	3	21.4	6	42.9	3	21.4	1	7.1	0	0	

1=Sayeda Sara - 2=Gernata -3=Abu Daba'at- .4=Abu Hanak-.5=Yosry Natsheh.

P values marked with (*) were derived using the Fisher exact test. All others were done using the Chi-square test.

Finally, there was a statistically significant relationship between teachers' schools and their responses to the school health environment related questions as shown in Table 5.25. In general, the most positive answers were the teachers of Sayeda Sara School who tended to answer "always", while the teachers of Yosry Natsheh school's responses answered "rarely or never".

For example, 100% (n=17) of Gernata schools' teachers versus 83.3% (n=25) of Sayeda Sara schools' teachers indicated that their schools "always" had a green garden, while 83.3% (n=25) of Abu Hanak schools' teachers versus 64.3% (n=9) of the teachers of Yosry Natsheh school stated it as "never" (p=.000).

Moreover, 71.4% (n=10) of the teachers of Yosry Natsheh school versus 33.3% (n=10) of the teachers of both Abu Hanak and Sayeda Sara schools indicated that there were "never" air conditioning units at school, while 52.9% (n=9) of the teachers of Gernata school versus 17.4% (n=4) of the teachers of Abu Daba'at school reported it as "sometimes"(p=.000).

Also, 58.8% (n=10) of the teachers of Gernata school versus 40% (n=12) of the teachers of Sayeda Sara school reported that there were "sometimes" heating systems at their schools, while 53.3% (n=16) of Abu Hanak schools' teachers versus 42.9% (n=6) of Yosry Natsheh schools' teachers indicated it as "never"(p=.000). Likewise, 100% (n=30) of the teachers of Sayeda Sara school versus 73.9% (n=17) of the teachers of Abu Daba'at school indicated that the drinking water was "always" accessible at school, while 35.7% (n=5) of Yosry Natsheh schools' teachers and 11.8% (n=2) of Gernata schools' teachers reported that as "sometimes" (p=.024).

In addition, 66.7% (n=20) of teachers of Al- Sayeda Sara school and 39.1% (n=9) of Abu Daba'at school teachers indicated that students "sometimes" drank from the tap water at their schools, while 73,3% (n=22) of the teachers of Abu Hanak school versus 57.1% (n=8) of the teachers of Yosry Natsheh school stated it as "often" (p=.000). Moreover, 90% (n=27) of the teachers of Alsayeda Sara school and 82.6% (n=19) of the teachers of Abu Daba'at school stated that toilets at their schools were "always" provided with water, while 28.6% (n=4) of

the teachers of Yosry Natsheh school versus 6.7% (n=2) of the teachers of Sayeda Sara school reported it as "sometimes" (p=.000).

Moreover, 87% (n=20) of the teachers of Abu Daba'at school versus 76.7% (n=23) of the teachers of Sayeda Sara school indicated that the space of the classroom was "always" compatible with the number of the students, while 53.3% (n=16) of the teachers of Abu Hanak school stated it as "never"(p=.000).

Finally, 100% (n=14) of the teachers of Yosry Natsheh school versus 20% (n=6) of the teachers of Abu Hanak school indicated that students' seats were "sometimes" comfortable, while 73.3% (n=22) of the teachers of Abu Hanak school versus 52.9% (n=9) of the teachers of Gernata school stated it as "often" (p=.000).

Table 5.25 a : Distribution of teachers' responses to school health environment related questions by teachers' school

No.	Paragraph	school	Always		Often		Sometimes		Very rarely		Never		Missing		P
			freq	%	freq	%	freq	%	freq	%	freq	%	freq	%	
1.	There is a rubbish bin in the school yard	1	29	96.7	1	3.3	0	0	0	0	0	0	0	0	.000*
		2	16	94.1	1	5.9	0	0	0	0	0	0	0	0	
		3	23	100	0	0	0	0	0	0	0	0	0	0	
		4	29	96.7	1	3.3	0	0	0	0	0	0	0	0	
		5	6	42.9	4	28.6	4	28.6	0	0	0	0	0	0	
2.	The school yard is spacious	1	27	90	1	3.3	2	6.7	0	0	0	0	0	0	.000*
		2	1	5.9	0	0	15	88.2	0	0	1	5.9	0	0	
		3	23	100	0	0	0	0	0	0	0	0	0	0	
		4	25	83.3	0	0	2	6.7	0	0	2	6.7	1	3.3	
		5	0	0	1	7.1	2	14.3	5	35.7	6	42.9	0	0	
3.	The school yard is clean	1	3	10	24	80	3	10	0	0	0	0	0	0	.000*
		2	8	47.1	9	52.9	0	0	0	0	0	0	0	0	
		3	5	21.7	13	56.5	5	21.7	0	0	0	0	0	0	
		4	18	60	7	23.3	4	13.3	1	3.3	0	0	0	0	
		5	0	0	3	21.4	8	57.1	3	21.4	0	0	0	0	
4.	The school has a green garden.	1	25	83.3	1	3.3	4	13.3	0	0	0	0	0	0	.000*
		2	17	100	0	0	0	0	0	0	0	0	0	0	
		3	15	65.2	8	34.8	0	0	0	0	0	0	0	0	
		4	0	0	0	0	3	10	2	6.7	25	83.3	0	0	
		5	0	0	0	0	0	0	5	35.7	9	64.3	0	0	
5.	There are air conditioning units at school	1	1	3.3	0	0	0	0	19	63.3	10	33.3	0	0	.000*
		2	0	0	3	17.6	9	52.9	2	11.8	3	17.6	0	0	
		3	6	26.1	4	17.4	4	17.4	5	21.7	4	17.4	0	0	
		4	1	3.3	0	0	2	6.7	17	56.7	10	33.3	0	0	
		5	0	0	0	0	0	0	4	28.6	10	71.4	0	0	
6.	There are heating systems at school	1	6	20	2	6.7	12	40	4	13.3	6	20	0	0	.000*
		2	0	0	5	29.4	10	58.8	2	11.8	0	0	0	0	
		3	4	17.4	7	30.4	8	34.8	3	13	1	4.3	0	0	
		4	2	6.7	0	0	3	10	9	30	16	53.3	0	0	
		5	1	7.1	1	7.1	1	7.1	5	35.7	6	42.9	0	0	
7.	There are appropriate sinks at school	1	30	100	0	0	0	0	0	0	0	0	0	0	.000*
		2	11	64.7	4	23.5	2	11.8	0	0	0	0	0	0	
		3	17	73.9	5	21.7	0	0	0	0	1	4.3	0	0	
		4	8	26.7	20	66.7	2	6.7	0	0	0	0	0	0	
		5	2	14.3	7	50	5	35.7	0	0	0	0	0	0	

Table 5.25 b

No.	Paragraph	school	Always		Often		Sometimes		Very rarely		Never		Missing		P
			freq	%	freq	%	freq	%	freq	%	freq	%	freq	%	
8.	Drinking water is accessible at school	1	10	33.3	16	53.3	4	13.3	0	0	0	0	0	0	.024*
		2	1	5.9	12	70.6	4	23.5	0	0	0	0	0	0	
		3	10	43.5	12	52.2	1	4.3	0	0	0	0	0	0	
		4	10	33.3	19	63.3	1	3.3	0	0	0	0	0	0	
		5	2	14.3	7	50	5	35.7	0	0	0	0	0	0	
9.	Students drink from the tap water at school	1	4	13.3	6	20	20	66.7	0	0	0	0	0	0	.000*
		2	9	52.9	8	47.1	0	0	0	0	0	0	0	0	
		3	9	39.1	4	17.4	9	39.1	0	0	0	0	1	100	
		4	7	23.3	22	73.3	1	3.3	0	0	0	0	0	0	
		5	3	21.4	8	57.1	3	21.4	0	0	0	0	0	0	
10.	The drinking water's taste at school is fine	1	3	10	2	6.7	2	6.7	15	50	8	26.7	0	0	
		2	6	35.3	10	58.8	1	5.9	0	0	0	0	0	0	
		3	10	43.5	8	34.8	4	17.4	1	4.3	0	0	0	0	.000*
		4	6	20	22	73.3	2	6.7	0	0	0	0	0	0	
		5	3	21.4	8	57.1	2	14.3	1	7.1	0	0	0	0	
11.	The drinking water at school is smelly	1	1	3.3	0	0	0	0	2	6.7	27	90	0	0	.002*
		2	0	0	0	0	1	5.9	8	47.1	8	47.1	0	0	
		3	0	0	2	8.7	0	0	12	52.2	9	39.1	0	0	
		4	1	3.3	1	3.3	0	0	6	20	22	73.3	0	0	
		5	0	0	0	0	1	7.1	9	64.3	4	28.6	0	0	
12.	Toilets at school are provided with water	1	27	90	1	3.3	2	6.7	0	0	0	0	0	0	.000*
		2	10	58.8	6	35.3	0	0	1	5.9	0	0	0	0	
		3	19	82.6	4	17.4	0	0	0	0	0	0	0	0	
		4	9	30	19	63.3	1	3.3	1	3.3	0	0	0	0	
		5	1	7.1	9	64.3	4	28.6	0	0	0	0	0	0	
13.	The school toilets are clean	1	3	10	6	20	21	70	0	0	0	0	0	0	.000*
		2	9	52.9	4	23.5	3	17.6	1	5.9	0	0	0	0	
		3	4	17.4	16	69.6	3	13	0	0	0	0	0	0	
		4	1	3.3	28	93.3	1	3.3	0	0	0	0	0	0	
		5	0	0	5	35.7	3	21.4	2	14.3	4	28.6	0	0	
14.	The space of the classroom is compatable with the number of students.	1	23	76.7	6	20	1	3.3	0	0	0	0	0	0	.000*
		2	9	52.9	8	47.1	0	0	0	0	0	0	0	0	
		3	20	87	2	8.7	1	4.3	0	0	0	0	0	0	
		4	3	10	2	6.7	0	0	9	30	16	53.3	0	0	
		5	0	0	9	64.3	2	14.3	3	21.4	0	0	0	0	
15.	There are windows in the classroom	1	30	100	0	0	0	0	0	0	0	0	0	0	.000*
		2	16	94.1	1	5.9	0	0	0	0	0	0	0	0	
		3	23	100	0	0	0	0	0	0	0	0	0	0	
		4	4	13.3	10	33.3	16	53.3	0	0	0	0	0	0	
		5	7	50	7	50	0	0	0	0	0	0	0	0	

Table 5.25 c

No.	Paragraph	school	Always		Often		Sometimes		Very rarely		Never		Missing		P
			freq	%	freq	%	freq	%	freq	%	freq	%	freq	%	
16.	There are bars on the windows in the classroom.	1	25	83.3	5	16.7	0	0	0	0	0	0	0	0	.000*
		2	16	94.1	0	0	1	5.9	0	0	0	0	0	0	
		3	23	100	0	0	0	0	0	0	0	0	0	0	
		4	10	33.3	18	60	1	3.3	0	0	1	3.3	0	0	
		5	1	7.1	10	71.4	3	21.4	0	0	0	0	0	0	
17.	The classroom gets enough ventilation through the windows	1	18	60	4	13.3	8	26.7	0	0	0	0	0	0	.000*
		2	8	47.1	8	47.1	0	0	1	5.9	0	0	0	0	
		3	17	73.9	5	21.7	1	4.3	0	0	0	0	0	0	
		4	4	13.3	22	73.3	1	3.3	3	10	0	0	0	0	
		5	2	14.3	10	71.4	2	14.3	0	0	0	0	0	0	
18.	There is a rubbish bin in the classroom	1	29	96.7	1	3.3	0	0	0	0	0	0	0	0	.012*
		2	15	88.2	2	11.8	0	0	0	0	0	0	0	0	
		3	23	100	0	0	0	0	0	0	0	0	0	0	
		4	23	76.7	7	23.3	0	0	0	0	0	0	0	0	
		5	14	100	0	0	0	0	0	0	0	0	0	0	
19.	Classrooms are cleaned periodically	1	22	73.3	4	13.3	4	13.3	0	0	0	0	0	0	.000*
		2	12	70.6	4	23.5	1	23.5	0	0	0	0	0	0	
		3	5	21.7	12	52.2	6	52.2	0	0	0	0	0	0	
		4	4	13.3	22	73.3	4	73.3	0	0	0	0	0	0	
		5	0	0	10	71.4	4	71.4	0	0	0	0	0	0	
20.	There is appropriate lighting in the classroom	1	20	66.7	4	13.3	6	20	0	0	0	0	0	0	.000*
		2	13	76.5	4	23.5	0	0	0	0	0	0	0	0	
		3	15	65.2	5	21.7	3	13	0	0	0	0	0	0	
		4	3	10	23	76.7	4	13.3	0	0	0	0	0	0	
		5	0	0	11	78.6	3	21.4	0	0	0	0	0	0	
21.	Students' seat is comfortable	1	20	66.7	7	23.3	3	10	0	0	0	0	0	0	.000*
		2	6	35.3	9	52.9	1	5.9	1	5.9	0	0	0	0	
		3	9	39.1	12	52.2	2	8.7	0	0	0	0	0	0	
		4	0	0	22	73.3	6	20	1	3.3	1	3.3	0	0	
		5	0	0	0	0	14	100	0	0	0	0	0	0	

1=Sayeda Sara - 2=Gernata -3=Abu Daba'at- 4=Abu Hanak- 5=Yosry Natsheh .

P values marked with (*) were derived using the Fisher exact test. All others were done using the Chi-square test.

Summary:

- Four hundred and twenty-nine students of the tenth grade classes and one hundred and fourteen teachers participated in the current study.
- All the participants (students and teachers) were selected from the five schools which were Alsayeda Sara , Gernata , Abu Daba'at , Abu Hanak and Yosry Natsheh schools.
- The majority of the students were females (66.7%) while 33.3% were males. The majority of the teachers were females (61.4%) and 38.6% were males.
- There are differences between students' and teachers' responses. For example:

    1. Nearly one third of the student participants (31.4%) and only 3.5% of the teachers stated that students never or rarely were aware of the importance of checking the expiry dates of the food items in the school canteens.
    2. Less than half of the students (46.1%) and (28.1%) of the teachers indicated there was never or rarely healthy food in the canteen.
    3. More than half of the students (51.2%) and only 2.6% of the teachers indicated that school was never or rarely visited by the school health teams.
    4. More than the half of the students (68.1%) and only 6.1% of the teachers reported that the school toilets were never or rarely cleaned .
    5. For seat comfortability, less than half of the students (45.4%) and a high percentage of the teachers (74.6%) indicated that their seats were always or often comfortable.

- There are similarities between students' and teachers' responses. For example,

    1. More than half of the students (67.9%) and a high percentage of the teachers (88.6%) indicated that students were always aware of the importance of the school hygiene facilities.
    2. 47.1% of the students and 48.2% of the teachers reported that competitions were never or rarely organized at their schools .

3. The majority of the students (92.5%) and (94.8%) of the teachers reported that the school never or rarely distributes free food meals for the students.

4. A high percentage of the students (92.5%) and the majority of the teachers (78.1%) indicated that chips and chocolate were always or often sold in the canteen.

5. more than the half of the teachers(57.9%) of the teachers and (46.6%) of the students reported that the school had green garden.

- The next chapter will discuss the findings of the current thesis and related issues.

Chapter Six

Discussion

Chapter six
Discussion

Introduction:

This chapter contains critical analysis of the major findings of the present study and interpretation of those findings in relation to previously conducted studies in literature review. The participants' characteristics and their responses to the questions are discussed, as are its the limitations. Moreover, the relation between some selected dependent and independent variables were explored.

This chapter discusses the following issues:

- Limitation of the study
- Methodological issues
- The characteristics of the participants
- The participants' responses to the school health program related questions

6.1 Limitation of the study:

Several limitations of the current study are worth to be mentioned. For example, this study utilized a cross-sectional design, due to the limitation of the available time and scarcity of resources. This type of design may has limitations in the generalization of the results to a wider population, since it measures both the prevalence of the outcomes and the determinants in a population at a point in time or over a short period of time (Horn, et al, 2008). Nevertheless, the cross-sectional studies are highly useful for descriptive purposes and it is relatively quick, cheap and easy to undertake (Grove & Burns , 2005 ; Monsen & Horn, 2008)

The data collection for this study was done by a self-reported questionnaire. So, the reliability of the results may be affected, since the participants may hesitate to express their points of view or they may describe their own thoughts, feelings or behaviors in spurious way (Mitchell, 2000). Finally, the subjects of this study were selected from five schools in Hebron city, therefore any generalization of the findings to other schools should be made with a caution.

6.2 Methodological issues:

As mentioned previously, a quantitative cross-sectional study was utilized to assess the School Health Program (SHP) at the governmental schools in Hebron city according to the perspectives of the students and the teachers'. This design was chosen because it is helpful in yielding an overview of the implementation of SHP components at schools and can show the relationship between different variables (Altman, 1991).

The data collection tool of this study was two self-reported questionnaires for the teachers and the students. As discussed in table (4.1) in chapter four, the questionnaire items were derived from two validated questionnaires of previous studies and some questions were added by five experts (two from Al-Quds University, one from the Palestinian Ministry of Health, and the other two were from the Directorate of Education /School Health section /Hebron). The questionnaire consisted of two sections, section one included independent variables such as gender and place of residency for students and teachers, and scientific degree for the teachers'. Section two included questions about the four components of School Health Program (SHP), which were health education and promotion (10 items), school nutrition (8 items for students and 7 items for teachers), school health services (12 items) and school health environment (21 items).

The validity of the study, which is defined as the best available approximation to the truth or falsity of a given inference, proposition or conclusion (Takona, 2002), was assessed by five experts (two from Al-Quds University, one from the Palestinian Ministry of Health, and two from the Directorate of Education /School Health section/ Hebron). In addition two focus groups of ten teachers and ten students from two schools in Hebron city (Asmaa Bent Abu Baker and Ibn Rushd Schools) were conducted. The participants were asked about the clarity, content of the questionnaires and any suggested alternatives questions. Based on their feedback and comments, language related changes to some questions were made to ensure better understanding of the questions by the students and the teachers. The reliability of the instrument, which refers to the degree to which a particular technique applied repeatedly to the same object yields the same result each time (Cohen, et al, 2007), was examined by using Cronbach's Alpha coefficient and its value was high (86%) (Takona, 2002).

Also, a cluster sampling of schools was utilized because the population is concentrated in natural clusters, which are the schools (Babbie, 2008). It is a sampling method where the

entire population is divided into groups or clusters and a random sample of these clusters are selected for the study (Babbie, 2008). This type of sampling can be used in situations where it would be impossible or impractical to obtain a complete list off all the elements in the population. Also, it provides a means of obtaining a larger sample at a lower cost. However, it increases sampling error and sampling bias that if the group in the population that is chosen as a cluster sample has a biased opinion when compared to the entire population (Babbie, 2008).
The total number of schools that had the 10^{th} grade level in Hebron city were 45 governmental schools with (4591) students and (1134) teachers (Directorate of Education/ Hebron, 2009). So due to the large number of students and teachers, 10 % of the total schools was selected randomly from the list and the sample size consisted of five schools which were Al-Sayeda Sara, Gernata B, Ibrahim Abu Daba'at, Mesbah Abu Hanak, and Yosry Al- Natsheh School . Three of these schools were for girls (n=286) which had 70 teachers and the other two schools were for boys (n =143) and they had 44 teachers as shown in table (4.1) in chapter four . The total sample consisted of 114 teachers and 429 students . A total of 543 questionnaires were distributed and a total of 543 were returned. So the final response rate was 100%.
For the purpose of this study, the data was analyzed by using the Statistical Package for Social Science (SPSS) version 15.The Chi-squared and Fisher Exact Tests were used to explore the relationship between the selected independent and dependents variables.

6.3 The characteristics of the participants:

The vast majority of the students were females (66.7 %), whereas 33.3% were males. 96.7 % of the students lived in the city, 2.8 % lived in a village and a few (0.5%) lived in refugee camps. For teachers, the majority were females (61.4 %) and 38.6 % were males. The higher percentages of females participants than male participants may be related to the fact that that three of the randomly selected schools were for girls. 89.5 % of the teachers lived in the city, 9.6 % lived in village and only 0.9% lived in refugee camps. Also, the majority of the teachers (87.7 %) had a bachelors degree, 9.6 % had diploma degree, and only 2.6 % (n=3) had a masters degree.

6.4. The participants' responses to the School Heath Program (SHP) related questions:

As has been discussed in chapter two, during the school age years, children begin to establish their own habits and risky behaviors that may stick with them for the entire of their lives (WHO, 1950). Also, during this period of time, children are eager learners and often respond well to advice about safety, healthy life styles and avoidance of high-risk behaviors (Maccoby, 1984). Schools can be considered the most suitable place in establishing and promoting healthy behavior patterns among school aged youth because they are the only public institutions that can reach most of the children where they spend nearly six hours per a day (Gelfman & Schwab, 2005). Schools can improve both the education and the health of students by implementing the school health programs (Allensworth et al, 1997).

In general, the results of the current study may differ from the findings of other previous studies in the literature. It revealed some response differences between the teachers and the students, and showed differences in relation to the participants' gender and participants' schools .

For example, in relation to the first component of SHP which is health education and promotion, the majority of the teachers (97.1% females and 86.4% males) versus 86.3% of the female students and 35.7% of the male students stated the existence of a health committee at their schools. However, Abu Hanak and Abu Daba'at schools had the highest percentages (100%) in stating the presence of health committee and Yosry Natsheh School reported the lowest percentage (57.1%) according to the teachers' responses, while Abu Hanak school had the lowest percentage (34.7%) according to the students' perspectives. These finding showed differences between the female schools and male schools and it may indicate that the health committee was available more at female schools than male schools. The health committee is very essential in addressing issues of concern such as monitoring the health situation of students, facilating health services, caring for school environment and overseeing the implementation of healthy activities, projects and health programs (Palestine, Palestinian Ministry of Education and Higher Education, 2008 b).

The importance of health education and promotion was emphasized in the findings of previous studies which showed that the school aged children and adolescents lack the knowledge about the healthy eating patterns and adopted risky behaviors which may lead them to short or long

terms health problems. For example, smoking and injuries are of the most serious health behaviors that may affect the health of school aged children as shown by Shaheen & Edwards' study which revealed that the injuries may lead to death among the Palestinian children between 5 and 19 years old (Shaheen & Edwards, 2008). And Jayousi study which found that smokers started their habit at early ages 12, 15 and 19 years old (Jayousi, 2003). These risky behaviors and others can be avoided by activating the health education and promotion component of SHP which aims to increase the awareness of students about the healthy life style by disseminating health information through different ways , such as health publications and posting of bulletin boards with awareness materials . However, the findings of the current study revealed a lack of posting bulletin boards with awareness materials and health publications in male schools . For example, only fewer than one third of the male students reported the posting bulletin boards or the dissemination of health publication at their schools (30.1% and 10.5% respectively) in contrast to higher percentages of female students (52.4% and 41.9% respectively). Also, Sayeda Sara school reported the highest percentages in posting these materials (60.2% and 56% respectively) while Yosry Natsheh school stated the lowest percentages (18.8% and 0% respectively) according to the students' perspectives. The posting of these materials especially at male schools is very important since the males are more engaged in risky behaviors such as smoking, injury or drug abuse. These publications would provide them with more understanding of many health critical issues that might enable them translate these knowledge and information into practice (Moyse , 2009 ; Mooijman, et al ,2005).

Another method of increasing students' awareness about health issues is school radio which is an effective method for reaching large number of students at the same time(Bhamrah & Romesh, 2004). The result of the current study showed that the female students were more concerned in activating the school radio in announcing or disseminating health information or nutrition information than the male students. On the contrary , the male teachers reported the use of school radio more than the female teachers. Also , it showed that schools focused on health information than nutrition information as 67.2% versus 38.8% of female students and 42.7% versus 18.9% of male students reported that health and nutrition information were broadcasted over school radio. Sayeda Sara school reported the highest percentage (73.4% and 45.5% respectively) and Yosry Natsheh school had the lowest percentage

regarding these issues (31.3% and 0% respectively) according to the students' perspectives. These results may indicate the need to activate the school radio at schools and particularly at the male schools and to disseminate health and nutrition information. Listening to school radio increase student's information and enriches them with the most recent developments and information about various areas of human knowledge and activities related to health (Bhamrah & Romesh, 2004). For example, the school radio can be used to broadcast health and nutrition information because in this phase school aged children begin to adopt risky behaviors and establish habits for eating that might stick with them for their entire lives, so school radio plays essential role in correcting or supplementing students with the right information (Bhamrah & Romesh,2004).

In addition, the organization of competitions and the involvement of students in voluntary activities may help in improving the health and the environmental behaviors of the students such as building interpersonal relationships, enhancing communication skills, improving the sense of well-being and increasing self-esteem in order to reduce anxiety and depression (Musick &Wilson ,2008). The male students in the current study reported the lack of involvement in competitions and voluntary activities(59.5% and 44.8% respectively) than the female students(40.9% and 27.3% respectively). Similar to previous findings Yosry Natsheh school reported the highest percentage (93.8%) and Sayeda Sara school had the lowest percentage (33.6%) in not organizing competitions according to the students' perspectives. This may indicate the need to increase students' involvement in these activities in order to increase their participation in community activities in future.

Moreover, the promotion of hygienic practices is considered essential aspect of school health promotion and education because the school aged children who are aware about the good hygiene practices in schools will become important health promoters at their homes and community (Mooijman, et al, 2005). The results revealed that the female students were more aware of school hygiene facilities or personal hygiene (79.4% and 74.8% respectively) than male students(44.8% and 46.9%). Also, Sayeda Sara school reported the highest percentage (83.9% and 80.4% respectively) and Yosry Natsheh school reported the lowest percentages(25% and 43.8% respectively) according to the students' perspectives. The regular inspection of students' personal hygiene is very important aspect of school health program to decrease the prevalence of head lices and other infectious diseases. More than the half of the

students(56.3% female and 52.5% male)versus higher percentage of the teachers(77.3% male and 60% female) reported the regular inspection of students' personal hygiene. Gernata school reported the highest percentage (65.9%) and Yosry Natsheh school had the lowest percentage (48.8%) according to the students' perspectives. These results may indicate the need to implement the components of SHP and put them into practice especially in males' schools. The head lices are considered as an indicator of personal hygiene (Hodjati, et al, 2008) and they have negative effects on humans' health including irritation leading to scratching, allergic reactions, and restlessness. Also, their bites may cause inflammation and itching. They transmit diseases such typhus, relapsing fever, trench fever and skin infections (Okwa & Omoniyi, 2010).

In addition to personal hygiene, The findings of the study showed that the majority of students were not aware about the importance of checking the expired dates of the food. For example, more than the half of the teachers (79.5% of male teachers versus 48.6% of female teachers) and only 36.3% of female students versus 21.7% of male students stated that there was an awareness about the importance of checking the expiry date of food at their schools. Also, 60.2% of male students and 44.4% of female students versus only 3.5% of the teachers reported that as" never or rarely". In addition, Sayeda Sara schools(44.1% of the students) had the highest percentages in reporting of such awareness , while Yosry Natsheh had the lowest percentage according to the students' perspectives (12.5%). As a consequence less than the half of the students (40.5% females and 38.5 % males) stated actually checking the expiry date of the offered food at school canteen and Yosry Natsheh school reported the highest percentage(56.3% of the students) in checking the expiry date. The health committee has a role in instructing students to inspect the expiration date of the various food materials that are sold at school or the markets. Checking the expiry date on food products is extremely important since the consumption of expired goods is not safe and the nutritional value of food will deteriorate and lose its quality (Ching Lu, 2009).

The second component of SHP is the school nutrition which has an essential role in increasing the awareness of students about healthy food and offering them nutritious items . SHP can help children in increasing their consumption of foods that are likely to have important health benefits and limit their intake of foods that are not recommended as part of a

healthful diet(Stand & Story , 2008). For that reason , healthy food and fresh juice should always be present and sold at school canteen. However , the findings of the current study showed that less than the half of the students (42.3% of female students and 30% of male students) versus 52.2% of male teachers and 37.1% of female teachers reported the affordability of such items. While Abu Hanak and Yosry Natsheh schools had the lowest percentages (29.9% and 31.3% respectively), Abu Daba'at school reported the highest percentage (48.5%) according to the students' perspectives. The healthy nutrition during the childhood and adolescents periods build up the optimal health, physical growth and cognitive development(Roberti & Worthigton,2004) .

Moreover, the current study showed that the majority of the students (97.9% female and 81.8% males) stated the selling of chips and chocolate at school canteen. Also, it was noticed that the girls' schools had the highest percentages in having chips and chocolate at their school canteens , while Yosry Natsheh School had the lowest percentage (25%) according to the students' perspectives. The findings of the previous studies showed that school aged children lack healthy eating patterns and adequate knowledge regarding the importance of nutrition such as chocolate and chips (Jildeh et al, 2003; Isbaih, 2009; Mahfouz, 2009; Mikki et al, 2005; Odeh, 2005). Selling chocolate and chips at school canteen might be risk for obesity and dental cavities if students increase the consumption of such items (Bender, et al, 1997).

Similarly, the findings showed that the majority of the teachers and students (94.8% and 82.1% respectively) stated that the school "never or rarely" distributed free nutritious food items. One possible explanation for this finding is that the Palestinian Ministry of Education is not responsible about the distribution of free snack to all schools and it depends on the donors such as WFP to provide such services. So priority is given to the schools in area (C) in the Hebron city and only six schools in the northern part of Hebron had this service. Offering free food and snacks for students is very essential for the health of students, especially for those skipped breakfast at home which may affect their academic performance (School Health Department/Hebron,2009; Murphy et al,1998) .

In addition to what has been mentioned previously, another role of school health committee is to supervise and monitors the quality of food items being sold at the canteen in order to ensure that these items are kept in clean environment and are covered in containers or in the

refrigerator to prevent contaminations that might lead for food borne illness among students (Palestine, Palestinian Ministry of Education, 2008 b ; Forsythe, 2010), in addition to the supervision of the hygiene and cleanliness of both the canteen workers and the environment of the canteen. The results of the current study showed that more than the half of the teachers (75% males and 64.3% females) versus 55.3% of female students and 28.7% of male students stated that the workers in the canteen were cautious about their personal hygiene. Also , Abu Hanak school had the lowest percentage (26.7%) and Sayeda Sara school had the highest percentage (64.4%) according to the students' perspectives, while Abu Hanak school had the highest percentages(90 %) and Yosry Natsheh school reported the lowest percentage (42.9%) according to the teachers' perspectives. This discrepancy among the participants might due to the fact that the students are in more contact and on daily basis with the canteen workers than the teachers. The personal hygiene of the canteen workers may act as a potential source of pathogenic bacteria, which can lead to foodborne infection (Declan,(n.d)). So it is important to inspect their personal hygiene by SHP teams or by the health committee and particularly at male schools .

Not only the personal hygiene of the workers at the canteen was the problem that the students reported, but also, the unclean environment in which the foods were kept. For example, less than the half of the female students (46.5%) and 22.4% of the male students stated that food items that were offered at school canteen were kept in a clean environment. Also, Abu Hanak and Sayeda Sara schools had the higher percentages(93.4% and 90% respectively) in stating that the food items were kept in clean environment more than the other schools according to the teachers' perspectives. At the same time both Abu Hanak and Yosry Natsheh schools had the highest percentages(56.6% and 56.3% respectively) in reporting that the food items "never or rarely" being kept in clean environment according to the students' perspectives. In contrary, most of the selected schools reported the availability of refrigerator in school canteens. For example, 83.3% of the teachers (92.9% females and 68.1% males) versus 73.7% of the student (78% girls and 62.9% boys) stated that the school canteen had a refrigerator. However, Yosry Natsheh school had the lowest percentages in reporting the presence of the refrigerator according to the teachers and students' perspectives(0% and 12.5% respectively). These findings may raise the questions about the role of SHP in

inspecting the canteen environment to prevent diseases among students especially in hot weather.

The third component of SHP is the school health services which offer preventative services such as immunizations, visual, dental, growth monitoring and development. The current study showed that the majority of the participants reported the availability of students health cards at schools which recorded these services and few did not know about them . It is known that these cards are kept in students' file at the school so students may not aware about their presence. Immunization is essential in preventing many infectious diseases among students (Edelman& Mandle, 2006) . The results showed that the female students had the highest percentages in reporting that they were given the vaccine at the school than the male students(82.9% of the female students versus 32.2% of the male students) . This discrepancy between the participants might be explained by the fact that the female students are vaccinated three times(1st , 6th and 9th grades) and the male students vaccinated twice(1st and 9th grades) during their studying years. Or that male students may answered this question negatively because they did not have vaccinations in the 10th grade according to the SHP protocol .

Moreover, dental examination and eyesight test are among the essential tests that are offered for students by school health services. The findings revealed lack the availability of such services at schools. For example, more than the half of the teachers(62.3% and 54.5% respectively) and less than the half of the students stated the conduction of dental and eyesight tests at their schools(38.5% and 39% respectively). In addition, Abu Daba'at school had the highest percentages (79.8% and 78.5% respectively) in stating the conduction of these tests while Yosry Natsheh school had the lowest percentage (6.3% and 0% respectively) according to the students' perspectives .The inconsistency between teachers' and students' responses might due to the fact that these tests are only conducted twice during the school years in the 7th and 10th grades. The SHP should assess the implementation of these tests frequently because these tests are very important in alarming the students of any defects or deficiency in their vision or dental cavities which require treatment and appropriate therapy for their eyes (WHO, 1951). Defective vision may lead for slow achievement and as the earlier visual defects are identified and corrected the greater the child's' chance for normal life (Bender, et al, 1997). Moreover, dental caries and loss of several teeth may interfere with child's

development and achievement at school (Bender, et al, 1997). So having proper dental care will keep their overall health positive resulting in less absence from school (Kwan et al, 2005). The establishment of clinics with a doctor or a nurse at schools will facilitate these tests and will help in lowering the absenteeism among students, reducing medical cost and recognize early symptoms of disease (Bear, 2002). The findings of the current study showed that the majority of the teachers and students (93% and 82.9% respectively) stated that there was "never or rarely" been a clinic at their school. In addition, more than half of the students and teachers (56.2% and 52.7% respectively) stated that the school administration "never or rarely" called for professional health assistance in the case of suspicion of infection. One possible explanation of this finding is that schools might never had such cases, or there is a lack of such services at the schools to detect or identify these cases. The school provide an ideal source for the spread of communicable diseases because of the large numbers of students in close contact with each other who may not yet have developed good personal hygiene or immunity against infection or communicable diseases and that can influence the potential risk of infection spreading among the students and the staff **(**Baxter,2005) **.**

The establishment of clinics is also important because previous studies showed that injuries were considered one of the most serious health behaviors that may affect the health of school aged children. For example, Shaheen & Edwards' study showed that the injuries which may lead to death among the Palestinian children were caused by transport accidents and falls (Shaheen & Edwards, 2008). The majority of the teachers and the students (84.2% and 70.8% respectively) in the current study reported that in the case of emergencies such as students getting injured at school, they were assisted or transferred to hospital. Abu Hanak and Yosry Natsheh schools had the lowest percentages (61.4% and 62.6% respectively) of reporting the availability of this service according to the students' perspectives .

Moreover, the implementation of the school health program required monitoring and supervision by the school health team from the school health department of the Directorate of Education in Hebron city to ensure the proper implementation of the components of SHP. The majority of the participants reported lack of these visits as only 27.6% of the students(33.6% females and 15.4% males boys) stated that the school health team visited their school. It was noticed that the girls' schools had more visits of school health team than male students (Abu

Daba'at (78.3%), Sayeda Sara (76.6%) and Gernata (76.5%)). While Yosry Natsheh school had the lowest percentage in reporting these visits (6.3% of the students and 42.8%of the teachers). One possible explanation of this finding is the lack of personals as that there are only four supervisors in the school health department, so they may not be able to visit these schools frequently and each one of them has to visit ten schools(School Health Department/Hebron, 2009).

The final component of the SHP is the school environment. One essential aspect of this component is the school garden which can serve many purposes. For example, the green garden with flowers and trees will give better look to school building, will make the school campus look beautiful, and the students will have pleasure to sit under the shades of trees (Mishra, 2009). The results of the current study showed a lack of gardens at schools and particularly the male schools. For example, 57.9% of the teachers (94.3% females and none of the males) versus 46.6% of the students (68.1% girls and 3.5% boys) stated the presence of gardens at their schools. Yosry Natsheh and Abu Hanak schools had the lowest percentages (0% and 3.9% respectively) according to the students' perspectives. It is important for SHP to pay more attention to this item because gardens are considered as an effective means of relieving stress among students and improving their well-beings (Maller, et al, 2005). They offer the opportunities for the students to learn about plants and animals (biology), the relationship between the seasons and weather, the sun and the earth (geology/environment), the interrelationships between the living things in the garden (ecology), how to grow food and flowers and care for a garden (gardening/horticulture) and how to prepare food grown in the garden (cooking/nutrition) (Maller, et al, 2005).

In addition to the gardens, the availability of air conditioning and heating systems (good thermal environment) are essential for students' performance. The majority of the students reported that their schools "never or rarely" had air conditioning or heating systems(83.5% and 88.2% respectively) . Similar to the other findings, Yosry Natsheh school had the highest percentages of reporting not having air conditioning or heating systems (100% of the teachers and 93.8% of students respectively). The schools should have these systems because the lack of such systems might cause health problems that impair concentration and cause upper

respiratory infections, nausea, dizziness, headaches , fatigue or sleepiness which in turn will affect students' performance and productivity (Schneider,2002) .

Another problem that is raised by the participants is the availability of safe water and appropriate sinks. Less than the half of the students (37.8% and 49% respectively) stated the presence of appropriate sinks and the accessibility of drink water at their schools. There was discrepancy between teachers' and students' responses as the majority of the teachers claimed the availability of them (91.2% and 86.8% respectively). Also, Sayeda Sara school reported the highest percentages of having appropriate sinks (100% of the teachers and 53.9% of the students) and Yosry Natsheh school had the lowest percentage according to the students' perspectives(18.8%). One possible explanation for the discrepancy between students' and teachers' responses is that the teachers may not use the same sinks that students had , or the sinks are not available for the students at these schools. Further qualitative study might be required to explore this issue. The provision of safe water and appropriate sanitation facilities will create a healthy physical learning environment and reinforce the health and hygiene messages for the students (UNICIF, 2006) .

Interestingly, the majority of the students reported that they did not drink from the water at their schools even it is available. Similar to the previous findings, there is discrepancy between students' and teachers' responses as (75.9% of female students and 45.5% of male students versus none of the teachers) reported that they "never or rarely" drink from the tap water . Sayeda Sara school reported the lowest percentages (10.5%) while Yosry Natsheh school reported the highest percentages that students drink from the water tap (43.8%) according to the students' perspectives. The differences between students' and teachers' responses might be explained by the fact that the students may bring water bottles from their homes, they may buy water from the canteen , or the teachers may assume that the students drink from the water tap in their schools. Another possible explanation is that the students may not drink from the water tap in their schools because it is smelly or its taste is not fine as the findings of the current study revealed. For example, 56% of the female students and 35.6% of the male students versus 34.3% of the female teachers and 2.3% of the male teachers stated that the water taste was not fine. As students at Sayeda Sara school reported the lowest percentage of drinking the tap water and the highest percentage of them reported that this water was smelly (57.4%). Interestingly, Yosry Natsheh school had the lowest

percentage (31.3%) of reporting that the water was smelly which is contrary to other findings. These findings may indicate the need to supervise the quality of the drinking water at schools in order to ensure that students have an access to clean water, or to use filters to provide clean and fresh water for them .

In addition to the lack of clean water for drinking, the findings showed that the water which is important to maintain the hygiene of the toilets is not available and these toilets are not clean. For example, only less than the half of the students(48.8%) versus the majority of the teachers(92.1%) stated the provision of water at the toilets. While Sayeda Sara school reported the highest percentage in stating the provision of water (60.1%),Yosry Natsheh school reported the lowest percentage (12.6%) according to the students' perspectives**.** This discrepancy may be explained by the fact that these teachers may have separate toilets from the students' toilets. Only 12.8% of the students versus more than the half of the teachers(66.7%) reported that the toilets were cleaned. The lack of hygiene practice and cleanliness of the school toilets may encourage the spread of enteric diseases such as diarrhea, and in turn have a negative impact on the health of students leading to higher absenteeism and lower the academic achievement (UNICEF, 2006). In addition, students may avoid visiting these toilets, drinking less water and in turn, suffering from dehydration that may lead to kidney and bladder diseases (McGavin,2003). The lack of cleaning staff at their schools might be one of the reason of this findings as each school has one or two cleaners and according to the guidelines of the public safety at schools, there shoud be one toilet available per 30 or 25 students. The cleanliness of these toilets is the responsibility of school cleaning staff, who should clean the toilets twice a day (after the break and when the students leave the school) (Palestine, Palestinian Ministry of Education and Higher Education, (n.d)) which might be hard to achieve at these schools. The role of the school health committee is to supervise and follow up the hygiene of school facilities, especially the toilets to prevent health problems among students.

In addition, the guide of the public safety at schools indicated the importance of the comfortability of the seats for students which must be appropriate with their physical configuration and fit with their age groups because the uncomfortable seats might convey the value that is being placed on work and concentration over comfort and relaxation (Devine, 2003). Teachers in the current study reported more comfortability of chairs than students as

90% of the female teachers and 50 % of the male teachers versus 51.9% of the female students and 32.2% of the male students indicated that students' seats were comfortable. Also, Sayeda Sara school had the highest percentage in stating the comfortability of students' seats(53.2%) while Yosry Natsheh school reported the lowest percentage(12.6%) according to the students' perspectives. These results may indicate the need for more action in the provision of suitable seats for the students especially male students.

In summary, the findings of the current study show differences between students' and teachers' responses in relation to the SHP components, along with some weaknesses in most of the schools and particularly at Yosry Natsheh school. For example, there is a weakness in the health education and promotion related component of SHP in relation to the awareness of checking of the expiry date, the lack of posting bulletin boards and dissemination of health publications, and the involvement of the students in competition and voluntary activities.

Another area where weakness was noticed in the school nutrition-related component especially the affordability of healthy food and fresh juices at the school canteen and the activation of school radio for nutrition information. There was also a weakness in the supervision of the hygiene of the canteen environment and the personal hygiene of the canteen workers. Regarding the school health service, there were a lack of dental examinations and eyesight tests, and a lack of clinics with doctors or nurses at their schools. Finally, for school health environment, there was a lack of a good thermal environment, safe and good quality of drinking water, based on self-reported answers, cleanliness of the school toilets and the availability of green gardens, particularly the male schools.

Despite these weaknesses, the SHP has many strengths. For example, the strengths in the health education and promotion related component were obvious in the presence of the health committee nearly in most of the schools, the broadcasting of health information through school radio, and the students' awareness of the importance of school cleanliness and personal hygiene. Also, the strengths were noticed in the school nutrition component especially the availability of the refrigerator at the school canteen. In relation to the school health services, there were strengths in the provision of the vaccinations to the students, the availability of

first-aid kit at school and in emergency cases, students were quickly and effectively assisted and/or transferred to hospitals in a timely manner (based on self-reported answers). Finally, for the school health environment-related component, the strengths were in the availability of appropriate lighting in the classroom, the periodic cleaning of the classrooms, and that school yards are spacious.

Summary:

- § Discussion and interpretation of the current study results, and comparison of those results with previous study findings.
- § The findings showed differences between teachers' and students' responses regarding the SHP components.
- § In general, the finding of the current study showed the strengths and some weaknesses in SHP components in most of the involved schools .
- For the health education and promotion component, the strengths was in the presence of the health committee nearly in most of the schools, the broadcasting of health information through school radio, the awareness about the importance of school hygiene and personal hygiene and there were lack about the awareness of checking the expiry date of food items, posting the bulletin boards and the dissemination of health publication, in addition to the lack of the involvement of the students in competition and voluntary activities.
- In relation to the school nutrition component, weaknesses were found in the supervision hygiene of the canteen and its workers and the lack of healthy food at the canteen, while the strength was only noticed in the provision of the refrigerator at the school canteen .
- Also, the results of the current study revealed some defects in the school health services component , in relation to the dental and eyesight tests and the availability of clinics , while the strengths appeared in the provision of the vaccinations to the students, the presence of first-aid kit at school and in the emergency cases for students, they are being assisted or transferred to the hospitals
- For school environment component, the result revealed strengths in the availability of appropriate lighting in the classroom, and the periodically cleaning of the classrooms, and that the school yards is spacious, while the defects were in the availability of good thermal environment , safe and good quality of drinking water and the lack of green gardens at the male schools.

Conclusion:

The current study aims to assess the SHP components in the governmental at Hebron City according to the students' and teachers' perspectives. The results revealed the strengths and some weaknesses in the SHP components in the five selected schools and particularly in the male schools.

Despite the various strengths in the School Health Programs, some deficiencies were noticed in the four components of the SHP, which are health promotion and education, the school nutrition, the school health services and school environment .For example, the weaknesses in the health promotion and education related component were in relation to the lack of posting bulletin boards and dissemination of health publication, the awareness of checking the expiry date. Also , the involvement of the students in competition and voluntary activities. Moreover, some defects were noticed in the school nutrition related component especially in the hygiene of the canteen and its workers, in addition to the lack of the availability of healthy food in the canteen. Likewise , weaknesses in the school health services related component were noticed particularly in the dental and eyesight tests and the availability of clinics at schools. Finally, some defects were as noticed in the school environment related component especially for the affordability of safe drinking water, hygiene facilitates(toilets), thermal environment, comfortable seats for students and the presence of green gardens at schools. Some defects were noticed more in the male schools particularly Yosry Natsheh school.

The findings of the current study ensure the importance of a proper SHP at the schools. Which might be achieved by increasing the number of members of school health committees to ensure a wider participation and input for a more comprehensive approach and enhance of the role of the school health coordinators by allocating more time to be invested in designing and implementing the SHP. Also, to ensure the achievement of the objectives of the SHP, regular evaluation of the SHP every three years is recommended .

Recommendation:

According to the findings of the current study the following recommendations are suggested

Recommendation for SHP team:

- More follow-up and close monitoring of the schools are highly recommended to ensure a smooth implementation of school health programs.
- Involve Parents' Associations and the community in the different stages of the SHP to enhance the feeling of ownership of the programs by the community.
- Increase the number of members of school health committees to ensure a wider participation and input for a more comprehensive approach.
- Conduct training sessions for school coordinators and the health committee to ensure awareness of current health matters.

Recommendation for the Palestinian Ministry of Education and Higher Education:

- Increase in the staffing per school on the management level to follow-up and monitor the implementation of the SHP components.
- Regular and more frequent evaluation of the effectiveness of the SHP every three years to ensure the achievement of the objectives of the SHP. In addition to that, publish the results of the evaluation process to improve the future design and implementation of the SHP.
- Increase the already-existing coordination with the different ministries and NGOs to improve the overall health situation at the school level in marginalized areas.
- Enhance the role of the school health coordinators by allocating more time to be invested in designing and implementing the SHP.
- Conduct training sessions for all school teachers to ensure awareness of current health matters.

- Further encouraging students to participate in more physically-active lifestyle, through establishing various sports clubs, indoor and outdoor activities, even after school hours., and to have competitions with other clubs from other schools.
- Introduce new components into the SHP such as sexual and reproductive health and physical activity.
- The frequent monitoring and supervision on the the schools of disadvantages students

Recommendation for Research:

- Further research is required to assess the SHP components in other cities in West Bank and Gaza Strip.
- More studies are required involving a greater number of schools (private, UNRWA and governmental schools).
- There is a need to conduct further studies to examine the relationship between participants' demographic factors such as place of residency, and their response to the implementation of SHP.
- Further research is needed to assess the SHP components according to the perspectives of the parents and the principals of the schools.
- There is a need for qualitative and quantitative studies to be carried out in other governorates and among larger number of schools in order to obtain more accurate picture for the implementation of SHP components .
- A need for a national survey to evaluate the health status of school aged children could be the most convenient method to be done in Palestine, in order to get a comprehensive information about the students health , such a national survey would enable the policy and decision makers to decide the necessary methods and measures that can be taken to support the SHP in order to be implemented properly.

Recommendation for health promotion and education related component :

- More focus on the dissemination of health and nutrition publications especially in male schools.
- Increase the non-curricular activities among students to enhance healthy behaviors among them, by involving them in competitions and voluntary works that are sponsored by the school administration.
- The frequent awareness of checking the expiry dates of the offered food items.

Recommendation for school nutrition related component:

- Activating the school radio by teachers and students to broadcast the nutrition information among the students.
- Creating a program that offers free food items to marginalized and poor areas in coordination with various non-governmental organizations and agencies to address nutritional deficiencies among the student population.
- The close and frequent monitoring for the schools' canteens to ensure the quality of the food items offered for sale, and having high cleanliness and nutritional standards as fundamental conditions in leasing these spaces to the companies that offer food.
- The frequent monitoring and supervision on the cleanliness of canteen environment and the hygiene of the workers.

Recommendation for School Health Services -related Component :

- Continuing and strengthening the regular collaboration between the Ministry of Health and the Ministry of Education to provide doctors or nurses to enhance health monitoring in order to be able to detect, identify, and treat health problems among students as they arise.
- Provide at least one medical staff member to every school to respond immediately in any health emergencies, especially in remote areas.

- Conducting the eyesight and dental tests annually for students in all the classes.
- Informing the students about the importance of the vaccination **.**

Recommendation for School Environment-related Component :

- An increase in supervision and monitoring of the cleanliness of school facilities especially the toilets.
- The continuation of monitoring of the quality of the drinking water by the Ministry of Health
- Increasing the number of cleaners at schools to ensure a proper cleanliness of school facilities.
- Continuing the organizing of the annual cleaning day, and the environment day, where people from the community, students, teachers, and parents would all participate in cleaning the school and its surroundings.
- Providing comfortable seats for students .
- Providing the schools with heating and conditioning systems.

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Appendix A

بسم الله الرحمن الرحيم

Al-Quds University

Jerusalem

School of Public Health

جامعة القدس

كلية الصحة العامة

التاريخ : /2009/9/15 م

الرقم: ك ص ع/ 23 /2009 م

حضرة السيدة نسرين عمرو المحترمة

مديرة التربية والتعليم

الموضوع: تسهيل مهمة للطالبة جيان بحثا

تحية طيبة وبعد،،

تقوم الطالبة جيان بحث مقابة ماجستير في كلية الصحة العامة تخصص إدارة صحية/ جامعة القدس بإجراء بحث بعنوان :

(Evaluation of school health program in Hebron Governmental schools)

كمتطلب لاستكمال رسالتها الماجستير. لذا نرجو من حضرتكم التكرم والإيعاز بما تروونه مناسباً لتسهيل مهمة الطالبة في جمع البيانات اللازمة بإجراء استمارات تشتمل على بنود برنامج الصحة المدرسية حيث يتم تعبئتها من قبل الطلاب والمعلمين.

وتفضلوا بقبول فائق الاحترام،،

عميدة كلية الصحة العامة

نسخة: الملف

Jerusalem Branch/Telefax 02-2759234

Gaza Branch/Telefax 08-2878166,2878177

P.O. Box 51200 Jerusalem

فرع القدس / تلفاكس 02-2759234

فرع غزة / تلفاكس 08-2878166-2878177

Appendix B

السلطة الوطنية الفلسطينية
وزارة التربية والتعليم العالي
مديرية التربية والتعليم / الخليل

Palestinian National Authority
Ministry of Education & Higher Edu.
Directorate of Education / Hebron

التاريخ: ١٩/١/١٩٩٩
الموافق: ٢٠/٩/١٤٢٩ هـ

حضرة مديرة مدرسة ..... المحترمة

الموضوع: تطبيق استبانة

بعد التحية،،،

أرجو مساعدة الطالبة ..... القادمة إليكن من جامعة ..... تخصص ..... من أجل تطبيق استبانتها الخاصة بها والتي بعنوان .....

مع الاحترام

أ. نسرين ياسر عمرو
مدير التربية والتعليم

نسخة إلى: الملف العام

Appendix C

Palestinian National Authority

الرقم : و ت/
التاريخ : / / 2009م
الموافق لـ: / / 1430هـ

السيدة مديرة التربية والتعليم/ المحترمة

تحية طيبة وبعد ،،

الموضوع: الدراسة الميدانية

الإشارة لكتابكم رقم ت خ/3095/1/19 بتاريخ 3 تشرين الثاني 2009م

لا مانع من قيام الطالبة " جيهان دعنا " من إجراء دراستها الميدانية بعنوان:

" Evaluation of school health program in Hebron Governmental schools "

وتوزيع الاستبانة المعدة لهذه الغاية على معلمي ومعلمات وطلبة مدارس مديريتكم، وذلك بعد التنسيق المسبق معكم على أن لا يؤثر ذلك على سير العملية التعليمية.

الرجاء تسهيل المهمة

مع الاحترام،،

أ. سعيد الديري

نائب مدير عام التعليم العام

نسخة / للملف

Ramallah, P.O Box (376) Tel (+970-2-298-5120) Fax (+970-2-298-5121)

Appendix D

Dear student,

Greetings. Jihan Da'na is a student conducting "an assessement of the school health program in governmental schools in Hebron city " as a requirement for a master's degree in public health from the University of Jerusalem - Abu Dis.

I ask for your help to complete this questionnaire, with emphasis that all information will be treated in full confidentiality and will only be used for the purpose of scientific research. Your participation in this study is voluntary and you do not need to write your name on the questionnaire.
The undersigned agrees to participate in this questionnaire

Signature:

Personal Information:

- Gender: Male Female
- Place of residence: City Village Camp or other .....
- School no.:

Health education and promotion:

No.	Paragraph	always	often	sometimes	Very rarely	never
1.	There is a Health Committee at school					
2.	You are made aware of the importance of the school hygiene facilities (toilets, the school yard, the classroom)					
3.	There is a bulletin board with enviromental and hygenic awareness material posted at school					
4.	Health information is broadcast over the school radio					
5.	Competitions are organised to improve health and envirnmental positive behaviours at school					
6.	You are involved in voluntary activities at school like cleaning day and enviroment day					
7.	Your personal hygiene is inspected regularly at school					
8.	You are made aware of the importance of personal hygiene at school					
9.	You are made aware of the importance of checking the expiry date on offered food items at the school canteen					
10.	Awarness publications are dissiminated at school					

School Nutrition

No.	Paragraph	always	often	sometimes	Very rarely	never
1.	You check the expiry date printed on food items being sold at school canteen.					
2.	There are healthy foods and drinks at the school canteen like natural juice, pastries, fruit					
3.	Information about the importance of nutrition and nutrious food is being brodcast over school radio					
4.	The school distributes free nutritious food items such as milk, sandwiches of thyme and oil					
5.	Workers in the canteen are cautious of their personal hygiene					
6.	Food and other related items are kept covered and in a clean enviroment					
7.	The canteen has a refrigerator to keep food and juice					
8.	Chips, chocolate are being sold in the canteen.					

School Health Services

No.	Paragraph	always	often	sometimes	Very rarely	never
1.	You have a health card at school					
2.	You are given vaccines at school					
3.	Your hair cleanliness is inspected at school					
4.	In the case of suspicion of infection, the school administration calls for proffesional health assisstance					
5.	In the case of emergencies such as getting injuried at school, you are assissted or transfered to hospital					
6.	Dental examination is conducted during your school years					
7.	Eyesight test is conducted during your school years					
8.	The school has a clinic.					
9.	There is a doctor or a nurse at school					
10.	The school is visited by a school health team					
11.	There is a first-aid kit at school					
12.	The students face health issue (headache, nausea, cramps ...) that required treatment within the school.					

School Health Environment

No.	Paragraph	always	often	sometimes	Very rarely	never
1.	There is a rubbish bin in the school yard					
2.	The school yard is spacious					
3.	The school yard is clean					
4.	The school has a green garden.					
5.	There are air conditioning units at school					
6.	There are heating systems at school					
7.	There are appropriate sinks at school					
8.	Drinking water is accessible at school					
9.	You drink from the tap water at school					
10	The taste of drinking water at school is fine					
11	Drinking water at school is smelly					
12	Toilets at school are provided with water					
13	The school toilets are clean					
14	The space of the classroom is compatable with the number of students.					
15	There are windows in the classroom					
16	There are windows bars in the classroom.					
17	The classroom gets enough ventilation through the window					
18	There is a rubbish bin in the classroom					
19	Classrooms are cleaned periodically					
20	There is appropriate lighting in the classroom					
21	Your seat is comfortable					

Appendix E

Dear teacher,

Greetings.

Jihan Dana is a student that is conducting" an assessment of the school health program in public schools in the city of Hebron" as a requirement for a master's degree in public health from the University of Jerusalem - Abu Dis.

I ask for your help to complete this questionnaire, with the emphasis that all information will be treated in full confidentiality and will only be used for the purpose of scientific research. Your participation in this study is voluntary and you do not need to write your name on the questionnaire.
The undersigned agrees to participate in this questionnaire.

Signature:

Personal Information:

- Gender: Male Female
- Place of residence: City village camp or other .....
- Qualifications: Diploma Bachelors Masters
- Specialty :----------
- School no.:----------

Health education and promotion:

No.	Paragraph	always	often	sometimes	Very rarely	never
1.	There is a Health Committee at school					
2.	Students are made aware of the importance of the school hygiene facilities (toilets, the school yard, the classroom)					
3.	Bulletin board with enviroment and hygenic awareness material posted at school					
4.	Health information are brodcasted over the school radio					
5.	Competitions are organised to improve healthy and envirnmental positive behaviours at school					
6.	The students are involved in voluntary activities at school like cleaning day and enviroment day					
7.	The students' personal hygiene is inspected regularly at school					
8.	Students are made aware of the importance of personal hygiene at school					
9.	Students are made aware of the importance of checking expiry date on offered food items at school canteen					
10.	Awarness publications are being dissiminated at school					

School nutrition

No.	Paragraph	always	often	sometimes	Very rarely	never
1.	There is healthy food and drink at the school canteen like natural juices, pastries, fruit					
2.	Information about the importance of nutrition and nutrious food are being brodcast over school radio					
3.	The school distributes free nutritious food items such as milk, sandwiches of thyme and oil					
4.	Workers in the canteen are cautious of their personal hygiene					
5.	Food and other related items are kept covered and in a clean enviroment					
6.	The canteen has a refrigerator to keep food and juice					
7.	Chips, chocolate are being sold in the canteen.					

school health services

No.	Paragraph	always	often	sometimes	Very rarely	never
1.	Each student has a health card at school					
2.	Students are given vaccines at school					
3.	Students' hair hygiene is being inspected at school					
4.	In the case of suspcion of infection, the school administration calls for professional health assisstance					
5.	In the case of emergencies such as student injuries at school, the student is being assissted or transfered to hospital					
6.	Dental examination is conducted during students' school years					
7.	Eyesight test is being conducted during students' school years					
8.	The school has clinic .					
9.	There is a doctor or a nurse at school					
10.	The school is being visited by a school health team					
11.	There is a first-aid kit at school					
12.	The students face health issues (headache, nausea, cramps ...) that required treatment within the school					

Health school environment

No.	Paragraph	always	often	sometimes	Very rarely	never
1.	There is a rubbish bin in the school yard					
2.	The school yard is spacious					
3.	The school yard is clean					
4.	The school has a green garden.					
5.	There are air conditioning units at school					
6.	There are heating systems at school					
7.	There are appropriate sinks at school					
8.	Drinking water is accessible at school					
9.	Students drink from the tap water at school					
10	The drinking water taste at school is fine.					
11	The drinking water at school is smelly					
12	Toilets at school are provided with water					
13	The school toilets are clean					
14	The space of the classroom is compatable with the number of students.					
15	There are windows in the classroom					
16	The windows in the classroom have bars.					
17	The classroom gets enough ventilation through the window					
18	There is a rubbish bin in the classroom					
19	Classrooms are being cleaned periodicaly					
20	There is appropriate lighting in the classroom					
21	The students' seats are comfortable					

Appendix F

استبانه

حضرة الطالب/ة المحترم/ة.....:

تحية طيبة وبعد،

تقوم الطالبة جيهان دعنا بأجراء بحث حول

(تقييم برنامج الصحة المدرسية في المدارس الحكومية في مدينة الخليل)

كمتطلب للحصول على درجة الماجستير في الصحة العامة من جامعة القدس – أبو ديس

أرجو من حضرتك المساعدة على تعبئة هذه الاستبانه, مع التأكيد أن جميع المعلومات ستعامل بسريه كاملة ولن تستخدم إلا لغرض البحث العلمي. وان مشاركتكم في هذه الدراسة طوعيه ولا داعي لكتابة الاسم الشخصي على الاستبانه.

انا الموقع/ ة ادناه اوافق على الاشتراك في هذه الاستبيانة...

التوقيع

المعلومات الشخصية

- **الجنس : ذكر أنثى**
- **مكان السكن : مدينة قرية**

مخيم او غيرها .....

- **رقم المدرسة:.....**

مجال التعزيز و التثقيف الصحي

الرقم	الفقـــــــــرة	دائما	غالبا	أحيانا	نادرا جدا	أبدا
.1	يوجد لجنة صحية في المدرسة					
.2	يتم توعيتك حول نظافة مرافق المدرسة (مراحيض, ساحة المدرسة, غرفة الصف)					
.3	يوجد مجلة حائط في المدرسة تحتوي على مواد توعية صحية وبيئية					
.4	يتم تقديم معلومات صحية من خلال الإذاعة المدرسية					
.5	يتم عمل مسابقات تساهم في السلوكيات الصحية والبيئية الايجابية في المدرسة					
.6	قمت بفعاليات تطوعية في المدرسة مثل يوم النظافة ,يوم البيئة أو غيرها					
.7	يتم التفتيش على نظافتك الشخصية في المدرسة					
.8	يتم توعيتك على أهمية النظافة الشخصية في المدرسة					
.9	يتم توعيتك إلى النظر إلى تاريخ انتهاء المواد الغذائية في المقصف المدرسي					
.10	هناك نشرات صحية توزع في المدرسة					

مجال التغذية المدرسية

الرقم	الفقـــــــرة	دائما	غالبا	أحيانا	نادرا جدا	أبدا
1	تنظر إلى تاريخ انتهاء صلاحية المواد الغذائية المقدمة من خلال المقصف					
2	يوجد أغذية ومشروبات في مقصف المدرسة مثل (العصائر الطبيعية,معجنات,فواكه)					
3	يتم تقديم معلومات صحيةعن التغذية وأهميتها من خلال الإذاعة المدرسية					
4	تقدم المدرسة خدمات تغذوية مجانية مثل الحليب,ساندويتشات زيت وزعتر					
5	العاملين في المقصف يهتمون بنظافتهم الشخصية					
6	يتم وضع الأغذية و المواد المقدمة في أوعية نظيفة ومغطاة في المقصف					
7	يوجد ثلاجة في مقصف المدرسة لحفظ الأطعمة والعصائر					
8	يباع في المقصف الشيبس,الشوكولاته...					

مجال الخدمات الصحية المدرسية

الرقم	الفقـــــــرة	دائما	غالبا	أحيانا	نادرا جدا	أبدا
1	لديك بطاقة صحية في المدرسة					
2	يتم إعطاءك المطاعيم الوقائية في المدرسة					
3	يتم التفتيش على نظافة شعرك في المدرسة					
4	في حالة الاشتباه باصابتك بمرض معدي تقوم المدرسة باستدعاء طاقم صحي					
5	في حالة اصابتك بمرض طاريء مثل وقوعك أو جرحك في المدرسة يتم إسعافك أو نقلك غالى المشفى					
6	يتم إجراء فحوصات لأسنانك خلال سنوات دراستك في المدرسة					
7	يتم فحص قوة الإبصار لديك خلال سنوات دراستك في المدرسة					
8	يوجد عيادة صحية في المدرسة					
9	يوجد طبيب / ة أو ممرض في المدرسة					
10	يزوركم فريق الصحة المدرسية في المدرسة					
11	يوجد حقيبة إسعاف أولي في المدرسة					
12	تعرض احد الطلبة لمشكلة صحية (صداع, غثيان, مغص...) ادعت العلاج داخل المدرسة					

مجال صحة البيئة المدرسية

الرقم	الفقـــــــرة	دائما	غالبا	أحيانا	نادرا جدا	أبدا
1	يوجد سلة مهملات في ساحة المدرسة					
2	ساحة المدرسة واسعة					
3	ساحة المدرسة نظيفة					
4	يوجد حديقة في المدرسة فيها ورود وأشجار					
5	يوجد اجهزة تبريد في المدرسة					
6	يوجد اجهزة تدفئة في المدرسة					
7	بوجد مغاسل صالحة للاستعمال في المدرسة					
8	مياه الشرب في المدرسة متوفرة					
9	تشرب من مياه الحنفية في المدرسة					
10	مذاق مياه الشرب في المدرسة جيد					
11	لمياه الشرب في المدرسة رائحة					
12	المراحيض في المدرسة مزودة بالماء					
13	المراحيض في المدرسة نظيفة					
14	مساحة غرفة الصف مناسبة لعدد الطلبة					
15	يوجد شباك في غرفة صفك					
16	يوجد حماية لشباك غرفة الصف					

تابع ...../مجال صحة البيئة المدرسية

الرقم	الفقـــــــرة	دائما	غالبا	أحيانا	نادرا جدا	أبدا
17	شباك غرفة صفك باعتقادك كافي لتهوية الصف					
18	يوجد سلة مهملات في غرفة الصف					
19	يتم تنظيف الغرف الصفية بشكل دائم					
20	الإنارة في غرفة صفك مناسبة					
21	مقعدك الدراسي مريح					

Appendix G

استبانه

حضرة المعلم/ة المحترم/ة.....:

تحية طيبة وبعد،

تقوم الطالبة جيهان دعنا بأجراء بحث حول

(تقييم برنامج الصحة المدرسية في المدارس الحكومية في مدينة الخليل)

كمتطلب للحصول على درجة الماجستير في الصحة العامة من جامعة القدس – أبو ديس

أرجو من حضرتك المساعدة على تعبئة هذه الاستبانه, مع التأكيد أن جميع المعلومات ستعامل بسريه كاملة ولن تستخدم إلا لغرض البحث العلمي. وان مشاركتكم في هذه الدراسة طوعيه ولا داعي لكتابة الاسم الشخصي على الاستبانه.

انا الموقع/ ة ادناه اوافق على الاشتراك في هذه الاستبيانة...

التوقيع:

المعلومات الشخصية

- **الجنس : ذكر أنثى**
- **مكان السكن : مدينة قرية**
  مخيم او غيرها .....
- **المؤهل العلمي: دبلوم بكالوريوس ماجستير**
- **التخصص:----------**
- **رقم المدرسة:----------**

مجال التعزيز و التثقيف الصحي

الرقم	الفقـــــــرة	دائما	غالبا	أحيانا	نادرا جدا	أبدا
.1	يوجد لجنة صحية في المدرسة					
.2	يتم توعية الطلبة حول نظافة مرافق المدرسة(مراحيض,ساحة المدرسة,غرفة الصف)					
.3	يوجد مجلة حائط في المدرسة تحتوي على مواد توعية صحية وبيئية مثل مخاطر التدخين, التوعية على الطرق, الغذاء المتوازن وغيرها					
.4	يتم تقديم معلومات صحية من خلال الإذاعة المدرسية					
.5	يتم عمل مسابقات تساهم في السلوكيات الصحية والبيئية الايجابية في المدرسة					
.6	يقوم الطلبة بفعاليات تطوعية في المدرسة مثل يوم النظافة ,يوم البيئة او غيرها					
.7	يتم التفتيش على النظافة الشخصية للطلبة في المدرسة					
.8	يتم توعية الطلبة على اهمية النظافةالشخصية في المدرسة					
.9	يتم توعية الطلبة الى النظر الى تاريخ انتهاء صلاحية المواد الغذائية المقدمة من خلال المقصف المدرسي					
.10	هناك نشرات صحية توزع في المدرسة مثل مضار التدخين, التغذية السليمة, الامراض المزمنة					

مجال التغذية المدرسية

الرقم	الفقـــــــرة	دائما	غالبا	أحيانا	نادرا جدا	أبدا
.1	يوجد أغذية ومشروبات في مقصف المدرسة مثل (العصائر الطبيعية,معجنات,فواكه)					
.2	يتم تقديم معلومات صحيةعن التغذية وأهميتها من خلال الإذاعة المدرسية					
.3	تقدم المدرسة خدمات تغذوية مجانية مثل الحليب,ساندويتشات زيت وزعتر					
.4	العاملين في المقصف يهتمون بنظافتهم الشخصية					
.5	يتم وضع الأغذية و المواد المقدمة في اوعية نظيفة ومغطاة في المقصف					
.6	يوجد ثلاجة في مقصف المدرسة لحفظ الاطعمة والعصائر					
.7	يباع في المقصف الشيبس,الشوكولاته,المشروبات الغازية...					

مجال الخدمات الصحية المدرسية

الرقم	الفقـــــــرة	دائما	غالبا	أحيانا	نادرا جدا	أبدا
1.	لكل طالب بطاقة صحية في المدرسة					
2.	يتم إعطاء الطلبة المطاعيم الوقائية في المدرسة					
3.	يتم التفتيش على نظافة شعر الطلبة في المدرسة					
4.	في حالة الاشتباه بإصابة احد الطلبة بمرض معدي تقوم المدرسة باستدعاء طاقم صحي					
5.	في حالة اصابة احد الطلبة بمرض طاريء مثل وقوعه أو جرحه في المدرسة يتم إسعافه أو نقله إلى المشفى					
6.	يتم إجراء فحوصات الأسنان الطلبة خلال سنوات دراستهم في المدرسة					
7.	يتم فحص قوة الإبصار لدى الطلبة خلال سنوات دراستهم في المدرسة					
8.	يوجد عيادة صحية في المدرسة					
9.	يوجد طبيب / ة أو ممرض في المدرسة					
10.	يزور فريق الصحة المدرسية في المدرسة					
11.	يوجد حقيبة إسعاف أولي في المدرسة					
12.	تعرض احد الطلبة لمشكلة صحية(صداع, غثيان, مغص...) ادعت العلاج داخل المدرسة					

مجال صحة البيئة المدرسية

الرقم	الفقـــــــرة	دائما	غالبا	أحيانا	نادرا جدا	أبدا
.1	يوجد سلة مهملات في ساحة المدرسة					
.2	ساحة المدرسة واسعة					
.3	ساحة المدرسة نظيفة					
.4	يوجد حديقة في المدرسة فيها ورود و أشجار					
.5	يوجد اجهزة تبريد في المدرسة					
.6	يوجد اجهزة تدفئة في المدرسة					
.7	بوجد مغاسل صالحة للاستعمال في المدرسة					
.8	مياه الشرب في المدرسة متوفرة					
.9	يشرب الطلبة من مياه الحنفية في المدرسة					
.10	مذاق مياه الشرب في المدرسة جيد					
.11	لمياه ا لشرب في المدرسة رائحة					
.12	المراحيض في المدرسة مزودة بالماء					
.13	المراحيض في المدرسة نظيفة					
.14	مساحة غرفة الصف مناسبة لعدد الطلبة					
.15	يوجد شباك في غرفة الصف					
.16	يوجد حماية لشباك غرفة الصف					

تابع ...../مجال صحة البيئة المدرسية

الرقم	الفقـــــــرة	دائما	غالبا	أحيانا	نادرا جدا	أبدا
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20	الإنارة في غرفة الصف مناسبة					
21	مقعد الطالب الدراسي مريح					